Effect of Asanas, Pranayamas and Kriyas on Cognitive and Physiological Variables of Women

Post-Doctoral Research Work
Submitted to
Indian Council of Social Science Research New Delhi

F.No.3-34/18-19/PDF/SC

Submitted By

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2022

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Dated: 07-12-2018

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Subject: ICSSR Post-Doctoral Fellowship for the Year 2018-19.

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Yours sincerely,

(S.M. Verma)

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I hereby declare that the Post-Doctoral research work entitled **"Effect of Asanas, Pranayamas and Kriyas on Cognitive and Physiological Variables of Women",** being Submitted through the Indian Council of Social Science Research, Aruna Asaf Ali Marg, New Delhi, in partial fulfillment of the requirement for the degree of Post-Doctorate in Physical Education is an original piece of research work done by me and that it has not previously submitted elsewhere for the award of any degree, diploma or any other academic qualifications, fellowship or any other similar title.

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Date: **Dr.Kasturi Rajaput**

Place: Vijayapura **(ICSSR Post-Doctoral Fellow)**

KARNATAKA STATE AKKAMAHADEVI WOMEN'S UNIVERSITY, VIJAYAPURA.

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CERTIFICATE

This is to certify that this Post-Doctoral research work entitled **"Effect of Asanas, Pranayamas and Kriyas on Cognitive and Physiological Variables of Women",** submitted by **Dr.Kasturi Rajaput** For the Degree of Post-Doctorate in Physical Education to the Indian Council of Social Science Research, Aruna Asaf Ali Marg, New Delhi, is based on the results of the study carried out by her under my guidance and supervisions.

This Post-Doctoral research work or any part thereby has not been submitted elsewhere for the award of any other degree.

Date: **Dr. K.P.Martin**

Place: Vijayapura **(Research Guide)**

CERTIFICATE

This is to certify that four publications in the form of articles on the research topic have been published in Peer-Reviewed refereed journals and conference proceedings.

Dr. K.P.Martin
(Research Guide)

Dr.Kasturi Rajaput
(ICSSR Post-Doctoral Fellow)

ACKNOWLEDGEMENT

First and foremost, I praise God, the almighty, merciful and passionate for giving me the strength, knowledge, ability and for providing me with this opportunity and encouragement especially during all the challenging moments in completing this Post-Doctoral research work. Without his blessings, this achievement would not have been possible.

I would like to acknowledge my indebtedness and heartiest gratitude to my supervisor, **Dr. K.P.Martin Associate Professor,** Department of Studies in Physical Education and Sports Sciences, Karnataka State Akkamhadevi Women's University, Vijayapura, for his support, guidance, advice and for giving me wonderful opportunity to complete my project it is really an honour. He is a teacher, an inspiration, a role model and a pillar of support for my whole career. Thank you for your enthusiasm and your wealth of knowledge in this field.

I record my sincere thanks to Vice-Chancellor **Prof.B.K.Tulasimala** for their valuable support and providing us with excellent infrastructure facilities and encouragement.

I would also wish to express my gratitude to **Prof Ramesh. K**, Registrar and Registrar (Evaluation), Karnataka State Akkamahadevi Women's University, Vijayapura, for his kindness, encouragement and valuable suggestions for the development of my career.

I would like to express my profound thanks to the Indian Council of Social Science Research, New Delhi for providing an opportunity to work as ICSSR Post-Doctoral Fellow from October 2018-19 onwards with generous financial support.

I would like to express my special thanks to **Prof.D.M.Madari,** Director, PMEB, Karnataka State Akkamahadevi Women's University, Vijayapura for being a great soul. He is always ready to help with a smile.

I am grateful to **Dr.Rajkumar P. Malipatil, Chairman and Dean,** Department of Studies in Physical Education and Sports Sciences, Karnataka State Akkamhadevi Women's University, Vijayapura for this valuable suggestions and encouragement offered to complete this research study.

I am grateful to **Dr.D.M.Jyoti Professor,** Department of Studies in Physical Education and Sports Sciences, Karnataka State Akkamhadevi Women's University, Vijayapura For sparing his valuable time whenever I approached him and showing me the way ahead.

I am grateful to **Dr.Sakpal Hoovanna, Professor and Director of Sports,** Department of Studies in Physical Education and Sports Sciences, Karnataka State Akkamhadevi Women's University, Vijayapura for this valuable suggestions and encouragement offered to complete this research study.

My sincere heartfelt thanks to **Dr.Srinivas, Dr.Jyoti Upadhye, Dr.Hanumanthayya Pujari, Dr.Kiran and Smt. Ashwini** of Department of Studies in Physical Education and Sports Sciences, Karnataka State Akkamhadevi Women's University, Vijayapura for helping me throughout my research study at the university.

I owe my sincere thanks to **Dr.Gavisiddappa A,** Associate Professor, Department of Library and Information Science, Karnataka State Akkamahadevi Women's University, Vijayapura for spending his valuable time on Statistical work and guidance for the completion of this research work.

I owe my sincere thanks to **Dr.Soubhagya** Associate Professor, Department of Education, Karnataka State Akkamahadevi Women's University, Vijayapura for spending her valuable time giving and guidance from scratch till the completion of this research work.

I owe my sincere thanks to **Dr.Themeena Sultan** Assistant Professor, Department of journalism, Karnataka State Akkamahadevi Women's University, Vijayapura for spending her valuable time by giving timely suggestions for the completion of this research work.

My in-depth gratitude to my friend, **Dr.Mahadevi. D.Wali, Post-Doctoral Fellow** Department of Studies in Physical Education and Sports Sciences, Karnataka State Akkamahadevi Women's University Vijayapura, who went through hard times together, cheered me on and celebrated each and every moment.

I must express my gratitude to **Mrs. Supriya Baichbal** for her continued support and encouragement.

I am also thankful to non-teaching staff members, Department of Studies in Physical Education and Sports Sciences, Karnataka State Akkamhadevi Women's University, Vijayapura.

My acknowledgement would be incomplete without thanking the biggest source of my strength, my family. Words cannot express how grateful I am to my father **Shri. Devu Hamu Rajaput** and mother **Smt. Rukmabai** for all of the sacrifices that you have made on my behalf. The love and care of my Sisters **Smt.Shantabai, Neelabai, Smt.Kamalabai and Dr. Geeta** and my brothers **Anilkumar, Suresh and Ravidas** have all made a tremendous contribution in helping me to reach this stage in my life.

I also thank all others who directly or indirectly helped me in my research work; I wouldn't be here without you.

Date: **Dr.Kasturi Rajaput**

Place: Vijayapura **(Post-Doctoral Fellow)**

DEDICATION TO MY BELOVED

Father

Shri.Devu Hamu Rajaput

Mother

Smt.Rukmabai Rajaput

Sisters

Smt.Shantabai, Neelabai, Smt.Kamalabai and Dr.Geeta

Brothers

Anilkumar, Suresh and Ravidas

All My Family Members and Relatives

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CHAPTER-1

INTRODUCTION

"Asana" is the Sanskrit word and for a physical posture. Expressed in general terms Asana denotes a specific position which can be held in a relaxed and comfortable manner for a long period of time. In the 2nd Century before Christ, Patanjali wrote down the principles of Yoga practice in the "Yoga Sutras" (Aphorims). He named only the meditation posture as "Asana" and the physical postures he termed as "Yoga Vyayam". However, in common usage, the dynamic Yoga exercises also be known as Asanas.

Many Asanas were derived from the natural movements and positions of animals and carry the names of animals such as "Cat", "Deer", "Tiger", etc. these postures make use of examples from nature on how to help one. Asanas have a far-reaching effect upon body and mind. The animals instinctively used these movements and positions because of their natural benefits. These effects are attained through the practice of the Asanas. For example: Marjari (the cat) for stretching the body and the spine, Bhujangasana (the Cobra) for the release of aggression and emotions, and Shashankasana (The Hare) for relaxation. The headstand (Shirshasana) and Lotus (Padmasana), are regarded as the Supreme or "Royal" Asanas.

Asanas are beneficial for the muscles, joints, cardiovascular system, nervous system, as well as the mind, psyche and chakras (energy centres). They are psychosomatic exercises that strengthen and balance the entire nervous system and harmonise and stabilise the practitioner's state of mind. The effects of these exercises are for a sense of contentment, clarity of mind, relaxation, and a feeling of inner freedom and peace.

The system "Yoga in Daily Life" is designed in such a way that the body is gradually and systematically prepared, leading from simple preparatory exercises towards the more advanced and difficult Asanas. Periods of relaxation are included at the beginning and end of each yoga class, as well as between the individual exercises. By developing the ability to relax, the feeling of one's own body is deepened. Physical and mental relaxation the prerequisite for the correct performance of all yoga exercises, and it the only in this way the effects of the asanas are completely unfold.

The breath plays an important role in the Asanas. With coordination of breath and movement, the yoga practice becomes harmonious, the breath deepens its own accord and the body's circulation and thus, metabolism is stimulated. The use of the breath greatly enhances muscle relaxation by concentrating on tense areas of the body and consciously relaxing those parts with each exhalation.

As most people are in the habit of breathing quite shallow, inadequately filling the lungs, the full yoga breath is practised in "Yoga in Daily Life". Correct breathing the fundamental to the body's optimum metabolic function. With regular practice, the full Yoga Breath becomes the habitual and natural way of breathing. Slower and deeper breaths improve circulation, nerve function, and one's whole physical condition. It also develops calm, clear and mind.

Benefits of Asanas

- All-round fitness
- Weight loss
- Stress relief
- Inner peace
- Improved immunity
- Living with greater awareness
- Better relationships
- Increased energy
- Better flexibility and posture
- Better intuition

Types of Asanas

Hatha Yoga

This is one of the oldest forms of Yoga which includes the practice of asanas (Postures) and pranayama (breathing exercise) which brings peace to mind and body, and helps to prepare the body for deeper spiritual practices such as meditation.

Vinyasa Yoga

It isb an active and athletic style of yoga adapted from the traditional ashtanga system in the late 1980's. It essentially is meant for synchronized of movement with

breath and is a vigorous style based on the rapid flow through sun salutation. It also refers to the continuous flow from one posture to another.

Astanga Yoga

Astanga is a system of yoga that was bought to the modern world by Sri K. Pattabhi Jois. This form of yoga includes six series and each series has a set sequence of asanas always in the same order. It is typically fast-paced, vigorous and physically challenging one.

Power Yoga

Power Yoga is described as vinyasa-style yoga. The Power popularity yoga's has spread across the globe and is now taught everywhere. Because the style can vary and it is recommended that one should consult the individual instructor before performing it.

Bikram Yoga

It consists of twenty-six postures and two breathing techniques. This style of yoga helps flush toxins, manage weight and allows one to perform to move more deeply into postures.

Jivamukti Yoga

This style of yoga was created in 1984. Chatting, meditation, readings and affirmations are done in this style of yoga.

Iyengar Yoga

Poses are held much longer in this form of yoga it is an effort to pay closer attention to the precise muscul skeletal alignment within each asana. Another trademark of Iyenger yoga is the use of props, such as blocks, belts, blosters, chairs and blankets, which are used to accommodate injuries, tightness or structural imbalances as well as to teach the student how to move properly into a posture.

Anusara Yoga

The anusara style is a new system of hatha that teaches a set of universal principles of alignment that underlies all yoga postures, while encouraging flowing with grace and following your heart. It is broadly categorized into three parts known as the three A's and they include Attitude, Alignment and Action.

Sivananda yoga

It typically begins with Savasana (relaxation pose), kapalabhati and anuloma viloma, followed by a few rounds of surya namaskara. Then it moves through Sivananda's twelve asanas, which together are designed to increase strength and flexibility of the spine. Chanting and meditation can also be considred as its part.

Viniyoga

Viniyoga refers to an approach to yoga that adapts the various means and methods of practice to the unique condition, needs and interests of the individual. This style of yoga helps in self-discovery and personal transformation.

Kundanili Yoga

Kundalini incorporates multiple movements or exercises, dynamic breathing practices, chanting, meditation and mantras. Each specific kundalini exercise, referred as a kriya, is a movement that is often repeated and is synchronized with the breath. The practice is designed to awaken the energy at the base of the spine in order to draw it upward through each of the seven chakras.

Yin yoga

Yin yoga is a slow-paced style in which poses are held for five minutes or longer. Even though it is passive, it becames challenging due to the long duration holds, particularly if your body is not used to it. The purpose is to apply moderate stress to the connective tissue- the tendons, fascia and ligaments – with the aim of increasing circulation in the joints and improving flexibility.

Pranayama

Pranayama is a Sanskrit word which consists of prana and ayama. Prana means self-energizing life forces and ayama means extension. Pranayama may be defined as expansion and control of prana through various yogic techniques. In a simple way, we can say that pranayama is a combination of systematic exhalation and inhalation.

Pranayama is made of two words “pra” which means “an” (to breathe or to live) creating new meanings life that fills with breath. Pranayama is the “control of breath”. “Prana” is a breath or bio energy in the body. On subtle levels, prana represents the pranic energy which is responsible for life or life force, and “ayama” means control. Therefore, Pranayam means “control of Breath”. One can control the rhymes of pranic energy with pranayama and achieve healthy body and mind.

In yogic the, pranayama is basically a series of exercises, which aims at bringing more oxygen to blood and to the brain. It not only automates the flow of blood but also regulates the proper functioning of thoughts and desire. The practice of this asana removes the obstruction which encumbers the flow of prana. It gives poise and tremendous will power. It generates lots of courage and will power within an individual. Pranayama is an art and has techniques to make the respiratory organs move and expand intentionally, rhythmically and intensively.

In other words, the term prana is related to the mind and mind is related to the brain, the brain is related to the soul (atma) and the soul (atma) is ultimately related to that eternal divine force called Paramatma “God”. Thus, the objective of pranayama is to stimulate, communicate, regulate and control the vital life force that exists in the body.

Benefits of Pranayama

- Pranayama controls ageing.
- Pranayama makes oxygen circulation smooth, helps in weight regulation by melting fat.
- Pranayama is the key of intelligence.
- It provides lightness to the body; acts as diseases destructor, brings vigour and power.
- Pranayama helps in lungs expansion thereby improves its efficiency and makes it healthy.
- It also helps in contending pressure and heart diseases; and it makes digestion smooth.

- It cures the phlegm, mucus and tonsillitis problems. It makes gums and teeth healthy.
- Pranayama brings stillness and calmness to the mind, increases concentration and stability of mind. Pranayama is good for physical mental and spiritual happiness.
- It makes us free from constipation and indigestion problems.
- Pranayama stimulates autonomic, sympathetic and parasympathetic nervous systems. It helps to ease stress, anxiety and tension. It also eases depression, dullness and lethargy.

Types of Pranayama

Nadi Sodhana Pranayama

This yogic pranayama is an innovative and specialized in bringing the balance in all the three doshas of the human body - the mind body and soul. For performing Nadi Sodhana, you need to sit comfortable in a cross-legged position now, use the right hand to close the right side of your nose. Inhale deeply with the left nostril. Repeat the same with left nostril. Practice it for 10-15 times every day.

Shitali Pranayama

This is the most refreshing breathing exercise. You need to roll your tongue in an "O" shape and start to inhale through the mouth. Hold your breath and practice Jalandhar bandh. Do exhalation from your nostrils after some time. You can repeat it for five to ten times. Shitali Pranayama mitigates pitta and increases Kapha an vata doshas.

Sheetakari Pranayama

This is more like the Shitali pranayama but changes in practice. In this pranayama, you have to produce "Sheetkar" sound from the mouth. Inhale the air by keeping your tongue behind the teeth. Apply the Jalandhar bandh and hold your breath. Exhale air using the nostrils. This pranayama should be practiced in summer for five to ten times. It will keep your body temperature under control.

Bhramari Pranayama

This is the humming bee pranayama that mimics the sound of a bee. Bhramari Pranayama is done by closing your years with the thumb and eyes with the help of fingers. Take a deep breath and exhale slowly making a buzzing sound like that of a bee. Benefits of bhramari pranayama are an increase in concentration and memory improvement.

Kriyas

In Sanskrit, “Kri” means “act” and “ya” means “soul”. Therefore, Kriya in Sanskrit means an act or a completed action for the experience of the Divine. Kriya Yoga refesto is a technique or practice that is supposed to achive a specific result. It is a scientific technique of meditation that helps in the development of the mind, the body, the soul and the intellect. It combines the essence of many other yoga techniques through the practice of which a person can go beyond the body sense, thoughts and sense organs. It includes many concentration breathing exercises as well as simple body exercises. The objective of practicing this technique is the transformation of one’s life energy into a higher form of awareness i.e the supreme (or the highest) state of cosmic awareness.

Yogic science gives importance to certain cleansing processes as it does to asana or pranayama. Without regular cleansing of the system one cannot gain maximum benefit from yoga practices. Without purification of the body one will not be ready for the higher practices of yoga.

Body cleansing can be done by the practice of the shatkarmas or six purificatory techniques which are very important from the point of view of physical and mental health. These simple techniques are also highly valuable in healing internal disorders. There are six main groups of shatkarmas or yogic cleansers as follows:

- Neti: nasal cleaning, including jala neti and sutra neti.
- Dhauti: cleansing of the digestive tract.
- Nauli: abdominal massage.
- Basti: colon cleaning.
- Kapalabhati: purification and vitalization of the frontal lobes.
- Trataka: blinkless gazing.

Each of these groups contains more than one practice, such as jala neti, vaman dhauti (or kunjal kriya), moola shodhana etc. They are all excellent practices designed to purify the whole body and bring about first-class health. They also bring clarity and harmony to the mind.

Benefits of Kriya

Kriya is a technique of pranayama. This has lot of positive effects on the heart and lung. It has capacity to cure ailments related to digestion. In addition to that it has profound impact on liver, kidney, pancreas and other important organs. Kriya yoga has tremendous impact on hormone flow in women such as estrogen and progesterone. Kriya yoga helps get rid of deeply entrenched bad habits and if one keeps practicing them ultimately get success in eradicating those bad habits.

Physical benefits

- Improves the physical health and makes a deep impact on the process of digestion.
- Enhances flexibility of muscles makes a spines
- Relaxation of muscles
- Reduces stress
- Improves health and well-being
- More energy
- Strengthens immune system
- Reduces cholesterol levels.

Mental health benefits

- Greater creativity
- Greater clarity of mind
- Improves sleep
- Enhances brain function
- Improves ability to manage challenging situations.

Improved interpersonal relations

- More ease, joy and harmony in personal and work relationships.

- A deeper sense of community
- Increases awareness both of self and surroundings
- Improves patience
- Increases confidence and self-esteem.

Psychological benefits

- Relieves depression and anxiety
- Relief from anxiety and depression (mild, moderate and severe)

Spiritual benefits

- Enhances yoga and meditation practices
- Experience a deep inner peace of mind

The researchers wanted know the effect of 16 week training effect of cognitive and physiological variables.

Statement of the Problem

The purpose of the study was to find out the "**Effect of Asanas, Pranayama and Kriyas on Cognitive and Physiological Variables of Women".**

Objectives of the Study

- The researcher emphasis to find out the effect of Asanas training on the Cognitive Development.
- To find the effect of Pranayama training on the Cognitive Development.
- To find out the effect of Kriya training on the Cognitive Development.
- To study the Effect of Asanas training on Physiological Development of Women.
- To study the Effect of Pranayama training on Physiological Development of women.
- To analyze the Kriyas training on Physiological Development of Women.

Delimitations of the study

- For the purpose of the study, 120 female students between age group of 19-23 years were randomly selected as subjects.
- The selected subjects were randomly chosen from Smt. Bangaramma Sajjan Arts and Commerce College for women, of Vijayapura, District of Karnataka state.
- The asanas, pranayama and kriyas training was delimited sixteen weeks and weekly 6 days 60 minutes total duration in the morning sessions.
- The study was delimited to Cognitive Variables i.e. Long Term Memory and Intelligence and Physiological Variables i.e. Resting Pulse Rate and Vo2 Max.

Limitations of the Study

- The daily routine work of the subjects influenced results. Hence this was considered as limitation.
- The climate condition as the time of conducting the test influenced the performance of the female subjects was considered as limitation.
- The general mood, environmental factor and performance in the test by the subject were recognized as limitation of the study due to varied social, cultural and environmental factors were not taken into consideration.
- No motivational technique was used for the collection of data.

Hypotheses

- It was hypothesized that training of Asanas develops Long Term Memory and Intelligence.
- It was hypothesized that training of Asanas reduces the Resting Pulse Rate Performance and Maximum Oxygen Consumption
- It was hypothesized that training of Pranayama develops Long-term Memory and Intelligence.
- It was hypothesized that training of Pranayama reduces the Resting Pulse Rate Performance and Maximum Oxygen Consumption.
- It was hypothesized that training of Kriyas develops Long Term Memory and Intelligence.
- It was hypothesized that training of Kriyas reduces the Resting Pulse Rate Performance and increases the Maximum Oxygen Consumption Vo $_2$Max.

Significance of the study

The outcome of the research helps Physical Education Teachers coaches and trainers to include Asanas, Pranayama and Kriyas training in their regular training Schedule to improve the cognitive and physiological development of their trainers.

Definitions of the terms

Asanas

The third limb of yoga is asana or posture. Asana brings steadiness, heahh and lightness of limb. A steady and pleasant posture produces the mental equilibrium and prevents fickleness of mind. Asanas are not merely gymnastic exercises. (**B.K.S Iyengar, 1966**)

Padmasana

Padmasana is a yoga posture that aids in the practice of meditation. It is one of the most popular, most ancient, and most performed yoga practices (**According to Wikipeddia).**

Vajrasana

Vajrasana the 'thunderbolt' pose; a kneeling posture with buttocks resting upon the heels **(According to Wikipeddia).**

Vakrasana

Vakrasana is a simple seated position that offers a soft spinal twist while also serving as a warm-up for more vigorous twisting postures **(According to yogapedia).**

Tadasana

Tadasana is the starting and finishing position of all sun salutation sequences in addition to its use as a resting pose between other more strenuous postures **(According to yogapedia).**

Vrikshasana

This asana requires the practitioner to stand on one leg with the other leg bent so the foot rests on the inside of the thigh. The hands are extended overhead with

palms touching **(According to Yogapedia).**

Shavasan

To enter Shavasana, the body lies face-up on the ground, with legs comfortably spread and arms relaxed alongside the body, palms facing up. The breath should be natural, and it is important that the body is in a natural position in which prana can flow freely **(According to Yogapedia).**

Naukasana

Naukasana is seated asana that requires core strength to the body in "V" shape **(According to Yogapedia).**

Halasana

Halasana is a folded inversion, begin, and lie down on the ground with arms at the sides and palms pressing down **(According to Yogapedia).**

Makarasana

Makarasana is however often used as a relaxation asana, an alternative to the supine savasana, and both head and legs are rested on the floor **(According to Wikipedia).**

Bhujangasana

The Bhujangasana pose may be entered from a prone position of from Downward Dog. The palms are placed under the shoulders, pushing down until the hips lift slightly **(According to Wikipedia).**

Dhanursana

The Dhanurasana from a prone position, the feet are grasped to lift the legs and chest to from the shape of a bow with the body, the arms representing the bowstring **(According to Wikipedia).**

Pranayama

Pranayama technique of the breathing and breath control which regulates energy flow and aims at maintaining energy balance **(According to yogapedia).**

Sheetali pranayama

Sheetali Pranayama also known as Coling Breath is a breathing practice that very effectively cools the body, the mind, and the emotions **(According to Wikipedia).**

Sheetkari pranayama

Sheetali pranayama colling breath'-a pranayama techniquie that lowers the body temperature by inhaling through the mouth while letting the breath flow in over the tongue **(According to yogapedia).**

Bramari pranayama

Bhramari Pranayama breathing practice in which a soft "Humming-bee" sound is produced during exhalation to stimulate the ajna chakra **(According to yogapedia).**

Kriyas

Kriya activity is a dynamic yogic practice **(According to yogapedia)**

Jalaneeti

Jalaneti a shatkarma technique-cleansing of the nasal passages with water by alternating the flow of water in the nostrils, preferably using a neti pot (**According to yogapedia)**

Kapalabhati

Kapalbhati Pranayama is a yogic breathing practice that is considered a Kriya, or internal Purification Practice **(According to Yogapedia).**

Trataka

Trataka one of the cleansing techniques (Shatkarma) in which the gaze is focused upon an object such as a candle flame **(According to encyclopedia)**

Cognitive

According to medical dictionary cognitive of relating to or being conscious intellectual activity (as thinking, reasoning, remembering, imagining or learning words) the cognitive elements of perception **(C.H.Hamburg)**

Long term memory

Long term memory is also called permanent memory, lasts for months or years **(Robertson, 2002).**

Intelligence

Intelligence is basically individual's ability or abilities to understand complex ideas, to adapt effectively to the environment, to learn from experience, to engage in various forms of reasoning and to overcome obstacles by careful thought **(Neisser et al., 1996)**

Physiology

Basic human physiology studies the body's systems that function appropriately and as expected (**According to medicine dictionary)**

Resting pulse rate

The time from the end of one contraction to the end of the next contraction is a complete heart beat or pulse or cardiac cycle. The complete cardiac cycle takes less than one second (about 0.08 sec) in a normal adult at rest and it shortened by exercise **(Astrand, 1977).**

Vo_2 max

$V0_2$ max is the maximal oxygen uptake or the maximum volume of oxygen that can be utilized in one minute during maximal or exhaustive exercise. It is measured as milliliters of oxygen used in one minute per kilogram of body weight. **(Jenson and Fiesher, 1972)**

CHAPTER -II

REVIEW OF RELATED LITERATURE

The researcher has made sincere efforts to collect the review of literature related to this study and found some references to similar studies which have been reviewed and produced in this chapter.

Review of related literature is very important and it plays a vital role to understand the problem thoroughly. The investigator has made an attempt to report the literature based upon the effects of different Asana, Pranayama and Kriyas training.

The related literature reviewed for better understanding of the problem and to interpret the results systematically. The reviews were collected from various sources like books, journal and periodicals and provide background information to the study and help us to understand various concepts of Asana, pranayama and kriyas training on cognitive and physiological variables i.e. long term memory, intelligence, resting pulse rate and vo2 max.

Patel and Pareshkimar B.Acharya (2015) have conducted a research on the influence of yoga on memory of gigher secondary school students. The main purpose of the research was to assess the effect of yoga on memory. With 80 adolescent students randomly selected for the study. Two groups were formed on the basis of equivalent IQ. At randomly the groups were formed as experimental group and control group. Experimental group and control group were undergone a pre-test to assess their short term memory. A yoga treatment consisting of asana, pranayama, surya namaskar, meditation and value orientation program was practiced on

experimental group for fifteen days. Both the groups were post tested for their performance on memory tests. The results that the students, who were performing yoga, exhibited better short term memory.

Arun Khatri and Surinder Singh (2014) have the study is an experimental one, where pre & post-test experimental design has been followed. The present study focuses on the effect of selected Yogic Kriyas (shat karmas) on selected psychological components viz, stress and anxiety. In the present study a group of 40 male hostler students was selected randomly from the campus of Maharshi Dayanand University. Rohtak studying in the various Teaching Depatments of the university. The age group range was between 18-25 years. These 40 students were equally divided into two groups, consisting of 20 students each. These two groups of students were given specific exercise with general warming up. Group A was given selected Yogic Kriyas (shat karmas) viz. kapalabhati and tratak. Group B was controlled group and was not given any type of exercise except general warming up exercises. These students went through Yogic Kriyas (Shat karmas) practice for nine weeks training program of one hour daily during morning session. NSAD stress questionnaire is used to measure the stress level of the subjects, where as Anxiety Inventory constructed and standardized by Dr. Rama pal and Dr. Govind Tiwari (1984) is used to measure the anxiety level of subjects. T-test is applied to test the significance of the means. Results of the research inferred that there is a significant effect of the yogic Kriyas (shat karmas) on the two selected psychological components viz. stress and anxiety.

B. Suman and Dr.M.Sivasankar Reddy (2014) have conducted the present study was designed to find out the effect of different packages of yogic practices on resting pulse rate among women college students. It was hupoticated that there would be significant difference among different packages of yogic practices on resting pulse rate among women college students. To achieve the purpose of the study 120 women students were randomly selected from Sri Padmavathi Womens Junior college, Tirupati. Their age was ranged between 16 and 20 years. The women students were equally divided in to three equal groups of 40 each as yoga packages-I, yoga package-II and control group. The control group was not given any training. The experimental groups were undergone yogic practices for twelve weeks and six days in a week. The data were collected on selected dependent variable Resting pulse rate, before and after

training period. The collected data were dependent variable Resting pulse rate, before and after training period. The collected data were statistically analyzed by using Analysis of covariance (ANCOVA) and Schaffer's post hoc test. To test the significance 0.05 level of confidence was fixed. Based on the results of the study it was concluded that the second package of yogic practices were significantly improve the resting pulse rate than that of first package and control group. First package of yogic practices were significantly improve the resting pulse rate, than that of control group.

Dr. Shikha Banerjee (2014): Yoga the scientific wealth of India, Yoga is one of the greatest gifts of India to the world. It has been an important part of daily routine for the Indian lifestyle. Today yoga has become one of the most popular systems of health and healing, all over the world. The sample of the present study comprises 40 students of the seventh class from school of Raipur C.G. the pre and post test of experimental and control group design was followed. There were two groups (control group and experimental group) and 20 students were assigned to each group. The experimental was conducted for 60 days with yoga practice viz. suryanamaskar, pranayama (anulom-vilom), bhramari, omkar jap, and yoga nidra regularly in the morning hours. Memory scale from P.G.I memory scale from N.N.Wig was used. In within group comparison, memory scores ($t=9.90$, $p<0.05$) and between boys and girls also were significantly influenced.

R. AravindKumar 1, Ramaprabha P, Bhuvaneshwari (2013) have counducted the Yoga is the science of right living proper exercise, proper relaxation, proper breathing, proper diet, positive thinking and meditation. Pranayama means control of breathing. As a technique pranayama is the practice of slow and deep breathing. In this modern world right from the adult to old age, occurances of cardiovascular complications are more. So in our study we conducted a session on nadi shodhana pranayama (NSP). To assess the effect on cardiovascular parameters among sixty healthy volunteers. Materials methods; Sixty first year M.B.B.S students of Sri Ramachandra university served as subjects. Age group of subjects was around 18-20 years of both genders participated in our study. Of these 60 subjects, 30 students will serve as controls Group II. The following cardiovascular parameters like the Heart Rate (HR), Systolic Blood pressure (SBP), and Diastolic Blood pressure

(DBP), pulse pressure (PP), Mean Arterial pressure (MAP) was recorded. All the above parameters were measured before and after 10 weeks of NSP. The results were analyzed accordingly. Results: Nadi shodhana pranayama significantly decreases the HR, SBP, DBP, PP AND MAP after 10 weeks of yoga training. Heart rate responses of yoga group significantly reduced from 79.43 + 3.12 to 65.49=2. Systolic blood pressure significantly reduced from 18= 3.30 to 101.74= 5.46. Diastolic blood pressure significantly reduced from 76 = 2.43 to 63.12 = 4.55. Pulse pressure reduced from 44.18 +3.81 to 43.82 + 3.92 in Mean Arterial Pressure reduced from 86.34+ 7.81 to 74.92 + 4.81. All these significant changes are observed in yoga group after 10 weeks of NSP. No significant changes were observed in the Group II (control) subjects. Conclusion: we concluded that nadi shodhana paranayama, increases the cardiovascular performances among the age group of ground 18-20 years of both genders in the Group II (control) subjects. Conclusion: we concluded that nadi shodhana paranayama, increases the cardiovascular performance among the age group group of around 18-20 years of both genders. The mechanism underluing for these responses is fully focused on domination ruled by para sympathetic nerve over sympathetic nerve. This in turn reduces the HR, SP, DP, PP and MAP.

Vijayalakshmi & Jayobal (2013) conducted a study on effects of combination of own body resistance exercises and plyometric with and without yogic practices on selected physical and physiological variables among adolescent boys. The aim of the study was to determine the effects of combination of own body resistance exercises and plyometrics with and without yogic practices on selected physical and physiological variables among adolescent boys. Sixty adolescent boys ranging between 13 and 18 years were selected and divided into three equal groups and they were trained for twelve weeks. Prior and after the training for the subjects pre-test and post test was conducted on agility, flexibility and resting pulse rate. Statistical analysis was done ANOVA. The result showed that the experimental groups showed remarkable increases in the agility, flexibility and resting pulse rate than the control group. Agility, flexibility and resting pulse rate variables of experimental groups improved after 12 weeks of training and other side insignificant improvement found in control group.

Dr. Pradnya Waghmare and Dr. P. S. Baji (2013) yoga is the science practiced in India since ancient times. It is derived from Sanskrit word Yuj means to bind together, Pranayama, astage and calm the mind. The present study was carried out in 60 healthy first year M.B.B.S students (40 males and 20 females). These students were given pranayama practice for one hour daily 6 days in a week for two months. The subjects were given assessed for various cardio respiratory parameters like respiratory rate (RR), FVC, FEVI PEFR, MVV pulse rate (PR), blood pressure before and after Pranayama practice. Statitistical analysis was done by paired T test. There was significant decreases in RR while FVC, FEV1, FEV1, PEFR, MVV were significantly increased in subjects after the practice of pranayama. There was highly significant increase in 40 mmHg endurance time and significant decrease in pulse rate.

P.Jothipriya, K Thangigaikoumarance (2013) have coundected there is evidence to prove that practice of Kriya, Bandha and Pranayama improves physical performance. The present investigation was undertaken to study the effect of pranayama and bandhas have vital role in the yogic breathing practices, the investigator analyzed the effect of pranayama and bandha practices on selected physiological variable among adolescence girls. To achieve this purpose, three groups of twenty adolescent girls each were randomly selected as subjects and named as 'bandha group' (BF)'pranayama group' (PG) and 'combined group (CG). BG and PG underwent selected bandha and pranayama practice respectively where as CG underwent the combination of both pranayama and bandha practice for six weeks. The selected subjects were tested before (pre test) and after (post tests) the practice period on the selected variables for the research work and were statistically treated by applying ANCOVA and Scheffe's post Hoc test. The result of this study was proved that selected bandha adolescent girls. Daily practice of yoga is one of the prime and easiest ways to maintain the physiological functions attain fitness and free from especially among adolescent girls.

Vidhyasree (2012) have study was designed to find out the effects of aerobic dance and pranayama on selected physiological variables. To achieve this purpose, 90 girld were Selected from St. Joseph's college, cuddalore. The age group of the subjects ranged between 18 and 20 years. The subjects were divided into three groups

and each group consisted of thirty subjects. Two experimental groups were subjects to the third group acted as control group. The data on the selected variables were collected before and after the training period. The selected variables were resting pulse rate and breathe holding time. Resting pulse rate was measured by stethoscope and breath holding time was measured with stop watch. The data was collected and analyzed statistically by the use of analysis of covariance (ANCOVA). The findings show that all these variables significantly improved among experimental group than the control group.

Naraasrinivas, Dr.S.Chan Basha, Shaik.Mehaboob Subhani (2012) has conducted a study to find out "the effect of Yogasanas and aerobics Training on the physical, physiological Cognitive and Bio-chemical Variables' of forestry Graduates. Forty five forestry Graduates were selected with age ranging between 18 and 23 years. They were divided in to three equal groups, in which Group I underwent yogic asana training and Group II underwent aerobic training for one and a half hour per day for a period of sixteen weeks and group III acted as control group, who did not participate in any training. The subjects were tested on selected criterion variables such as speed, muscular strength, Flexibility, Breath Hold Time, Resting Heart Rate and Oxygen Consumption (VO2 max). Speed was measured with 50 meters dash. Muscular strength was measured with Hand Grip Dynomometer. Flexibility was measured with the reliable equipment sit and reach box. Breath hold time was measured with stop watch. Resting Heart Rate was measured with stethoscope and Oxygen Consumption (VO2 max) was measured with Running on tread mill using Benedict Roth spiro meter. Significant improvements were found between yogasanas and aerobic training groups when compared to the control group. It was found that the yoga training group yielded better results than the aerobic training in improving the breath holding time. Resting pulse rate and oxygen consumption (VO2 max).

Sekar Babu and Kulothugan (2011) have conducted studied the effect of yogic practices on selected physiological variables of men hockey players. Thirty men hockey players were selected from annamalai university, Chidambaram. Their age ranged between 18 to 25 years. The subjects were divided into two groups namely the control and the experimental group. The experimental group underwent forty five

minutes selected asanas and pranayama practice five classes per week for eight weeks. Control group did not undergo any training programme except their routine work. Breath hold time was measured by the standard stop watch and resting pulse rate measured by using stethoscope. Prior to and after end of practice period all subjects were tested. The results of pre-test and post test were compared by using Analysis of co-variance. The Yogic practices groups significantly improved breathe hold time and significantly decreased resting pulse rate when compared to the control group.

Sukhadev Singh and Vishaw Gaurav (2011) have found out the "Effect of a 6 week nadi –shodhana pranayama training on cardio-pulmonary parameters "the aim of the study is to assess the effects of a 6 weeks nadi-shodgana pranayama training on cardiopulmonary parameters. A group of 30 male healthy subjects were selected from department of physical education (T), guru Nanak Dev University, amritsir (Punjab, India), aged 18-24 years, volunteered to participate in the study. Subjects were assigned into two groups; A (experimental: N-15) and B (control: N-15). The subjects were group A (experimental: N-15) were subjects to a 6 week nadishodhana pranayama training programme. This lasted 6 weeks and consisted of daily sessions, lasting 30min. heart rate was measured by counting radial pulse for a minute. Vital capacity was measured by spirometer. Both systolic and diastolic blood pressures were measured with the auscultatory method by using sphygmomanometer and stethoscope. Results showed that the vital capacity significantly improved ($p<0.01$) in experimental group compared with the control one. A significant decline in basal heart rate ($p<0.01$) and systolic blood pressure ($P<0.05$) was observed. In contrast, control subjects did not show recommended to improve vital capacity and control heart rate and blood pressure and may contribute to enhance health status and control heart rate blood pressure and may contribute to enhance health status and wellness.

Samsudeen (2011) have conducted study investigated the effect of asanas, pranayama, meditation and game-specific raining on selected physical fitness components and performance parameters among Disrict level Cricketers. Forty eight male college level Cricketer were randomly selected from various affiliated clubs of maurai District and their age ranged between 18 and 25 years. Initially the cricket

playing ability of the subjects were subjectively rated by three qualified coaches. By using matching procedure on the basis of their cricket playing ability the subject were classified in to three matched groups, each having sixteen subjects. Group I was involved in game-specific field training, group II was given game-specific field training combined with yogic practices and group III (control) was not exposed to any specific training/conditioning. The game-specific field training schedule was specifically designed to improve the cricket playing ability and fitness levels of the cricketers. The game-specific training packages designed by the investigators of the study was administrated for a period of twelve weeks, five days a week, two sessions each day, each session lasted two hours. The yogic practices ere meted out for 45 minutes to group II either before or after the game –specific field training. The yoga practices include selected asana, pranayama and meditation technique. The motor components namely speed; explosive strength, endurance and flexibility were selected as variables for this investigation. Fifty meters run, standing broad jump, twelve minutes run and stand and reach tests were used to collect the physical fitness components of the subjects. Three qualified coaches subjectively rated the Cricket playing ability of each player. The guideline for subjective rating was given by the investigators. The pre and post test were conducted one day before and after the experimental treatment. Analysis of covariance was used to analyze the collected data. Scheffe's test was used as a post hoc test to determine which of the paired mean differ significantly. The results of the study reveal that both game-specific training and game-specific combined with yogic practice produced positive impact on the motor components and performance parameters.

John Partiban (2011) have find out the qualification of physiological Responses to yogic practices and weight Training among professional college men players. For this pupose, forty five men students studying undergraduate Engineering courses in government college of engineering, salem, Tamilnadu India in the year 2010-2011 were selected as subjects at a random and they were divided randomly into three groups of fifteen each, group I underwent Yogic Practices, group II underwent weight training and group III acted as Control . The training period was limited to twelve weeks. The dependant variables selected for this study were Resting pulse Rate, Respiratory Rate and Cardio Respiratory Endurance. All the subjects were tested prior to and immediately after the experimental period on resting pulse rate,

respiratory rate, Cardio respiratory rate, cardio respiratory endurance. The data obtained from the experimental groups before and after the experimental period were statically analyzed with analysis of covariance (ANCOVA). Whenever the 'F' ratio for adjusted post test means was found to be significant, the Scheffe's test was applied as post hoc test to determine the paired mean differences. The level of confidence was fixed at 0.05 levels for all the cases. Resting Pulse Rate, Respiratory Rate and Cardio Respiratory Endurance showed significant difference among the groups.

Saroja(2011) have conducted the study on to find out the effect of yoga practice, physical exercise and combination of yoga practice, physical exercise on selected motor ability components, physiological variables among college men students. For these purpose sixty college men students were selected as subjects at random from various colleges in Sivangangai District, Tamilnadu, India and their age was 19-23 years. They were divided four groups namely yoga group. Physical exercise group and yogic practice and physical exercise combined group and control group. The first three groups did yoga asanas, pranayama, dhayana and physical exercise respectively for six weeks. The pre and post test were taken for all the subjects before and after the training respectively. Dependent variables are Motor ability components (flexibility, cardio respiratory endurance) and physiological variables (resting pulse rate, breath holding time) independent variables (yoga, physical exercise, combination of yoga and physical exercises group and control group) were selected. This study concluded that the level of flexibility was improved greater by selected yogic practices that of physical exercises and combined training of yogic practices than of physical exercises and endurance was significantly improved greater by selected combined activities that of physical exercises. Also physical exercises improve the cardio respiratory endurance greater than yogic practices. Yogic practices improved the resting Pulse rate greater than physical exercise.

Dabre, Pravin C.; Pingle, P.V.; Tejrao, Dahake; Humbad, P.N (2011) have conducted the purpose of the study was to find out the effect of suryanamasakr, pranayama and yogasanas training on the intelligence of school going children. 154 subjects were selected for the study from the Aadarsha Vidyamandir Chikhali Dist., Buldana of Maharashtra state. The subjects are learning in the standard 5th of the session 2006-07 and the same subjects learning in 6th standard of the session 2007-

08. These subjects were divided into the Controlled group and experimental group i.e 84 in control and 70 in experimental group. The experimental group underwent training of the Uttejak Vyayam (warm-up exercises), before strating the Suryanamskar (smantrak), Asana (Padmasana, paschimothasana, tadasana, Bhujangasana, survangasana, Shavasana etc.) irrespective of the routine classroom teaching program, each day in morning six day in morning six-days a week for a total period of 10 months. Subjects of control group did not participate in the above program and kept busy with their interesting activities, separately during same period. Pre and post-test carried out with the help of the school annual Examination results. The assistance of the physical education teachers and the class teachers of the school was taken to conduct the test. The following conclusions found after the study: (i) the experimental group i.e practicing suryanamaskar, Pranayama and Asanas were good in their school results. And (ii) the training of suryanamaskar, Pranayama and Asanas on school going children's of the same group shows remarkable change in the School result sheets compare to the control group. Though the t-test shows that there is no significant difference between the various Yogic practices of the school going children and their school results, but the mean and summation of the results shown that the experimental group were better in their intelligence as compare to the control group.

Sukhadev Singh, Vishaw Gaurav and Ved Prakash (2011) the coundected the study find out the aim of the study is to assess the effects of a 6 week nadi –shodhana pranayama training on cardiopulmonary parameters. A group of 30 male healthy subjects were selected from department of physical education (T), guru Nanak Dev University. Amritsir (Punjab, India), aged 18-24 years, volunteered to participate in the study. Subjects were assigned into two groups: A (experimental; N-15) and B(control: N-15). The subjects from Group A (experimental: N-15) were subjected to a 6 week nadishodhana pranayama training programme. This lasted 6 weeks and consisted of daily sessions, lasting 30 min. heart rate was measured by counting radial pulse for a minute. Vital capacity was measured byspirometer. Both systolic and diastolic blood pressures were measured with the auscultatory method by using sphygmomanometer and stethoscope. Results showed that the vital capacity significantly improved ($p<0.01$) in experimental group compared with the control one. A significant decline in basal heart rate ($p<0.01$) and systolic blood pressure ($p<0.05$)

was observed. In contrast, control subjects did not show any significant change in these parameters. 'Nadi-shodhana Pranayama training programme may be recommended to improve vital capacity and control heart rate and blood pressure and may contribute to enhance health status and wellness.

Dr. Nagalaxmi V (2011) the coundected the study was prevalence of cardiovascular disease has increased substantially over the past few decades. It has been established that low fitness is one of the attributing factor for increased cardiovascular mortality. Yoga is a science practiced in India over thousands of years. Yoga aims to bring about functional harmony between body and mind through three main practices: asanas, pranayama and meditation. It was shown that yoga practices which improve stretch flexibility and control various physiological variables improve fitness of an individual. This study was done to know the effects of six weeks of yoga training on physical fitness and aerobic capacity of healthy individuals of both genders. Objective: To study the effects of six weeks of yoga practice on pulse rate, blood pressure, VO2 max and physical fitness index in healthy individuals. Methods: the present study consisted of 50 healthy subjects, including both genders of 20-40 years age group. 28 male and 22 female participants fulfilling the inclusion and exclusion criteria underwent one hour daily yoga program for 6 weeks taught by a certified yoga teacher. Pre yoga and post yoga cardiorespiratory functions were assessed by measuring pulse rate, blood pressure, VO2 max and physical fitness index. The pre and post yoga parameters were analyzed by Student t test. Results: There was significant reduction in resting pulse rate ($p<0.001$), systolic blood pressure ($p<0.001$) and diastolic blood pressure ($p<0.001$) after practicing yoga 6 weeks. The study also showed significant increase in VO2 max ($p<0.001$), and physical fitness index ($p<0.001$) compared to pre yoga practice. The response was similar in both the genders. Conclusion: This study showed beneficial effects of six weeks of regular yoga practice on aerobic capacity and physical fitness irrespective of gender in normal healthy individuals.

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Vanithamani (2010) have conducted a study to investigate the effect of specific yogic exercises, blood pressure, physiological variables such as anxiety and depression and biochemical variables such as high density lipoprotein, low density of lipoprotein fasting blood sugar, hemoglobin and blood urea. The experiment was conducted on sixty climatic women of reaching faculty from various colleges in Coimbatore district tamilnadu, India. This study concluded that specific yogic group and combination of specific yogic exercises with autogenic training group have achieved significant improvement on physiological, psychological and biochemical variables when compared to control group.

Punithavati (2010) hive find out a study to investigate the effects of aerobic exercises and yogic practices on selected physical, physiological and biochemical variables among school girls. Forty five girls were selected from St. Joseph of Cluny hr.sec.school, Pondicherry. The age group of the subjects ranged between 14 and 18 years. The subjects were divided into three groups and each group consisted of fifteen subjects. The two experimental groups underwent two different training programmes

namely aerobic exercises and yogic practices and the third group acted as control group which was not subjected to any training. The data on the selected variables were collected before and after the training period. The pretest and post test data collected from control, aerobic and yogic experimental groups were statistically analyzed to find out the significance of the variables such as speed, resting pulse rate and breathe holding time, by the use of analysis of covariance (ANCOVA). Findings show that all these variables were significantly improved among experimental group than the control group.

Amutha, (2010) have conducted study to find out the effect of selected yogic exercise and pranayama on anxiety, VO2 max and flexibility. For this purpose fifty male students were selected from various high and higher secondary schools in and around Chidamabaram town. They were divided into two equal groups. One as experimental group doing underwent training for nine weeks, weekly five days, Monday to Friday between 6.00 a.m to 8.00 am and control group (n=25) did not participate in any special training. The result of the study indicated that the anxiety was reduced significantly, maximal oxygen uptake and the flexibility increased significantly for the training group. It was concluded that the yogic exercise and had reduced the anxiety and increased the maximal oxygen uptake and flexibility.

Ramesh V, Sakthignanaval D and Subramaniam P.K (2010), the find out the effect of yogasanas pranayama on the selected physiological variables of school boy's. The selected variables include systolic pressure, diastolic pressure, pulse rate and respiratory rate. To achieve this purpose of the study, thirty boys in the age group of 12 to 15 years were selected from Jawaharalal navodaya vidyalaya Higher Secondary School. The subjects were randomly selected and divided equally into two groups as control group and experimental group. The experimental group. The experimental groups were given yogasanas and pranayama training for a period of twelve weeks, both mornings and evenings on five days a week. The control group did not participate in yogasana and pranayama training programme. The collected data were statistically analyzed by using analysis of covariance (ANCOVA). The experimental group had a significant improvement on the selected physiological variabales than the control group. This is the confirmation to our hypothesis. Key words: Systolic Pressure, Diastolic Pressure, pulse Rate and Respiratory rate.

Rajakumar (2010) to analyze the impact of yogic practices and physical exercises on selected physiological variables among the intercollegiate soccer players. 60 male intercollegiate soccer players from the various colleges; Chennai were selected at random. Their age ranged between 17 to 22. The selected subjects were divided into three equal groups of 20 each, namely yogic practice group (group A), physical exercise group (group B) and control group (group C). the experimental groups have underwent 12 weeks of training namely; yogic practices and physical exercises respectively, whereas the control group (group C) maintained their daily routine activities and no special training was given. The subjects of the three groups were tested using period to find out the training efforts in the following test items; Resting pulse rate through stethoscope, breath holding time through digital stop watch, peak flow rate through Wright's peak flow meter. The collected data were analyzed statistically through Analysis of covariance (ANCOVA) and Schiff's post-hoc test to find out pre and post training performances, compare the significant difference between the adjusted final means and the better group. The yogic practice group showed significant improved due to 12 weeks training on resting pulse rate, breath holding time and peak flow rate compared number to the physical exercise and control group. In their magnitude of improvement through training, yogic practice group is found to be the better group when compared to the other two groups.

Shenbagavali and Divya (2010) have conducted a study the effect of specific Yogic exercises and combination of specific Yogic Exercises with Autogenic Training on selected physiological, psychological and biochemical Variables of college men students. The purpose of the study is to find out the effect of specific yogic exercises programme and combination of specific yogic exercises with autogenic training programme on selected physiological variables such as pulse rate, vital capacity, percent body fat, psychological variables such as job anxiety, occupational stress and biochemical variables such as high density lipoprotein and fasting blood sugar of the college men students. Sixty men students in the age group of 20 to 30 years from Alagappa University were randomly selected and served as the subjects for the purpose of this study. The study was formulated selected and served as the subjects for the purpose of this study. The study was formulated as a random group design consisting of specific yogic exercises and combination of specific yogic exercise with autogenic training groups. The subjects (N=60) were at random divided

into three equal groups. Experimental group I – was administered specific yogic exercise group, experimental group II- underwent combination of specific yogic exercises with autogenic training group and control group. All the groups were subjected to pre-test prior to the experimental treatment. The experimental groups participated in their respective duration of 12 weeks, six days in a week throughout the study. Analysis of co-variance (ANCOVA) was applied to determine the significance of mean difference between the three groups. When F-ratio was found to be significant, the Schiff's post hoc test was applied to test the significance of pairs of the adjusted final group means. Practice of the combination of specific yogic exercises with autogenic training and specific yogic exercises programme is significantly effective promoting desirable changes in the dependent variables.

Umesh .C.Muktamath, Vinutha.U.Muktamath (2010) find out the "effect of Asana, pranayama and meditation practice on resting Pulse Rate" the purpose of the present study is to find out the effects of Asana, Pranayama and meditation practice on resting pulse rate. To achieve this purpose of the study, forty students studying in Lions high school, sirsi, Karnataka were randomly selected as subjects. The age of the subjects were ranged between 15 to 17 years. The selected subjects were divided in to four equal groups of ten subjects each. Group I underwent asana practice, Group II underwent pranayama practice, group III underwent meditation practice for five days per week for eight weeks of training period and group IV acted as control that did not participate in any special training programme apart from their regular activities. The data was collected at prior to and after the training programme of eight weeks. Resting pulse rate was chosen as a criterion variable. The analysis of covariance (ANCOVA) was used to analyze the data. The results of the study revealed that the resting pulse rate was significantly improved due to the Asana, pranayama and meditation practice.

Amrutha (2010) have conducted studyto find out the effect of selected yogic exercise and pranayama on anxiety, VO2 max and flexibility. For this purpose fifty male students were selected from various high and higher secondary schools in and around Chidambaram town. They were divided into equal groups. One as experimental group doing underwent training for nine weeks weekly five days,

Monday to Friday between 6.00 am to 8.00 am and control group (n=25) did not participate in any special training. The result of the study indicated that the anxiety was reduced significantly, maximal oxygen uptake and the flexibility increased significantly for the training group. It was concluded that the yogic exercise and had reduced the anxiety and increased the maximal oxygen uptake and flexibility.

Rajakumar (2010) have find out the study analyze the impact of yogic practices and physical exercise on selected physiological variables among the intercollegiate soccer players. To achieve this purpose, sixty (60) male intercollegiate soccer players from the various colleges; Chennai were selected at random. Their age ranged between 17 and 22. The selected subjects were divided into three equal groups of 20 each, namely yogic practice group (group A), physical exercises group (group B) and control group (group C). The experimental groups have underwent 12 weeks of training namely; yogic practices and physical exercises respectively, whereas the control group (group C) maintained their daily routine activities and no special training was given. The subjects of the three groups were tested using standardized tests and procedures on selected physiological variables before and after the training period to find out the training efforts in the following test items; resting pulse rate through stethoscope, breathe holding time through digital stop watch, peak flow rate through wright's peak flow meter. The collected data were analyzed statistically through Analysis of co-variance (ANCOVA) and Scheff's post hoc test to find out the pre and post training performances. Compare the significant difference between the adjusted final means and the better group. The yogic practice group showed significant improvement due to 12 weeks training on resting pulse rate, breath holding time and peak flow compared to the physical exercise and control group. In the overall training effects in terms of improved number of physiological variables and their magnitude of improvement through training, yogic practice group is found to be the better group the vital role played by yoga i.e physical fitness, fitness related to health, skill and performance has assumed tremendous importance in recent times. A review of research papers on yoga practices, physical exercises and its relation to metabolic changes is conducted at Vivekananda Kendra Yoga Research Foundation, jigni and Bangalore. The goal of the review was to establish a comprehensive literature review and provide a rationale for future research concerning metabolic changes during yoga practice. Computer searches were conducted using Medline,

pubmed, along with library search and review of published journals and standard textbooks. The purpose of the study was to analyse the effect of ujjaini and bhastrika pranayama on selected physiological variables. For this 60 physically challenged male students were randomly selected as the subjects from Amar Jyoti School and Roshini Rehabilitation center, Gwalior. Further the subjects were divided into two groups that is, experimental group and control group. The experimental group followed of Ujjayini and Bhastrika Pranayama for a period of 6 weeks. The training was given for 5 days in a week in the morning. Only four physiological variables that is, vital capacity, positive breath holding time, resting pulse rate and blood pressure were selected for the study. Pre and post test data on selected physiological variables were recorded prior to and after completion of 6 weeks pranayama training of experimental group, and the control group did not participate in the training programme. The criterion measures for measuring vital capacity was measured with recorder and medicare systems spirometer (Helios 401) in litres, positive breath holding and resting pulse rate was measured with the help of stopwatch, and blood pressure was measured by sphygmomanometer and stethoscope. Paired‘t’ test statistical technique was employed to analyse the raw data, and the mean difference between the pretest and post test scores each of the criterion variables of the groups. The level of significance was chosen at 0.05 levels. From the findings it was observed that‘t’ ratio was not significant in case of resting pulse rate and diastolic blood pressure. However in case of vital capacity and positive breath holding time‘t’ was significant. (Mazumdar and suryavanshi, 2010).

Ramesh V, Sakthignanavel D. Subramanian P.K (2010) find out the effect of Yogasanas and pranayama on the selected physiological variables of school boy’s. The selected variables include systolic pressure, diastolic pressure, pulse rate and respiratory rate. To achieve this purpose of the study. Thirty boys in the age group of 12 to 15 years were selected from jawaharalal navodaya vidyalaya higher secondary school. The subjects were randomly selected and divided equally into two groups as control group and experimental group. The experimental groups were given yogasanas and pranayama training for a period of twelve weeks, both mornings and evenings on five days a week. The control group did not participate in yogasana and pranayama training programme. The collected data were statistically analyzed by using analysis of covariance (ANCOVA). The experimental group had a significant

improvement on the selected physiological variables than the control group. This is the confirmation to our hypothesis. Key words: systolic pressure, diastolic pressure pulse rate and respiratory rate.

Rajakumar J, (2010) have the purpose of the study is to analyze the impact of yogic practices and physical exercises on selected physiological variables among the intercollegiate soccer players. To achieve this purpose, sixty (60) male intercollegiate soccer players from the various colleges. Chennai were selected at random. Their age ranged between 17 to 22 years. The selected subjects were divided into three equal groups 0f 20 each. Namely yogic practice group (group A), physical exercises group (group B) and control group (group C). the experimental groups have underwent 12 weeks of training namely; yogic practices and physical exercises respectively, whereas the control group (group C) maintained their daily routine activities and no special training was given. The subjects of the three groups were tested using standardized tests and procedures on selected physiological variables before and after the training period to find out the training efforts in the following test items; resting pulse rate through stethoscope, Breath holding time through digital stop watch, peak flow through wright's peak flow meter. The collected data were analyzed statistically through analysis of Co-variance (ANCOVA) and Schiff's post hoc test to find out the pre and post training performances, compare the significant difference between the adjusted final means and the better group. The yogic practice group showed significant improvement due to 12 weeks training on resting pulse rate, breath holding time and peak flow rate compared to the physical exercise and control group. In the overall training effects in terms of improved number of physiological variables and their magnitude of improvement through training, yogic practice group is found to be the better group compared to the other two groups.

Vadiya and Pansare (2010) find out the present study on the effect of yoga on pulseand blood presuure among medical students- boys and girls in the age group of 16-18 years. The students were divided into two groups. One group was given yoga training for a period of 6 weeks while the second group acted as a control. Resting pulse rate and blood pressure was measured in both groups before starting the course and at the end of the course. Results were analysed and compared. There was decrease in pulse rate and blood pressure after the yoga training in both boys and girls.

Kewal Krishan and Sudhir Kumar Sharma (2009) have conducted the stufy "effects of yogic practices and callisthenic Exercises on Resting Pulse Rate Variable of secondary School boys". The study contains the following. The objective of this research was to study the effects of yogic practices and callisthenic exercises on resting pulse rate variables of secondary school boys in Hamirpur district of uttar Pradesh toral 120 boys subjects (40 yogic practices group, 40 calisthenics exercises group and 40 control group.) wre put under yogic practices and calisthenics exercises group a pre test was taken for all the 120 subjects. Six weeks training of yogic practices and calisthenics exercises was given to the respective groups. A post test was taken after six weeks of the training. Analysis of variance was applied to compare the four groups, for their heart rate response pattern and Schaffer's post hoc test was applied to find out the superiority of the group. The result of the study indicated that resting pulse rate of yogic practices group was better than the other two groups. Keyword; calisthenics and resting pulse rate.

Sathyaveni (2009) have conducted a study to find out the effects of yogasanas and aerobics on the selected variables such as abdominal strength, flexibility and on selected physiological variables such as breath holding, resting heart rate, blood pressure and oxygen consumption and on selected cognitive variables, viz.., concentration, memory and mental fatigue. To achieve this purpose, 45 main subjects were randomly selected and they are divided into two experiment groups and one control group, each consisting of 15 subjects. It is found that the effects of yogasanas training on cognitive variables were superior to the aerobic group. The experiment group of yoasanas has achieved significant improvement on concentration, memory and mental fatigue as compared to control group.

Sandy Kimbrough, Rick Balkin (2009) have conducted the effect of inverted yoga positions on short-term memory. The study examined that the inverted yoga positions positively influence memory and attention due to increased blood flow to the brain. Three hundred participants were divided into four treatments utilizing a Solomon four (trochim, 20005) design (yoga pre/post, yoga post, control post). All participants competed a short-term memory test of a series of words read aloud at the conclusion of the treatmrnt condition; number of words recalled was the dependent variable. The findings of the study suggested that there was no significant difference

between the control group and the experimental group. In this study, the practice if inverted yoga positions did not influence short-term memory. Any improvement appeared to be the result of being exposed to the pretest rather than the participation in yoga.

Sw. Managalteerham Saraswati (Dr.A.K.GHOSH) (2009) have found yoga increases memory and concentration in children. Bera (2009) concluded that yoga is complementary to physical education and is bridge between body, mind and spirit. Its practice can help to improve health and fitness and it can train human mind to develop personality to establish peace. Khodaskar (2009) suggest that the yoga helps to reduce the stress of the students and build up their psycho-physical resistance and useful to develop emotional and panic balance.

Anju and Seema (2009) have found significant decrease in anxiety and depression level in college students after practice. Charu Mehandiratta (2009) found pranayama may improve metal health of children especially in the areas of emotional stability, over all adjustment, autonomy, security-insecurity, self concept and intelligence in children. Adhikari, Sharma and Kumari (2009) concluded after one month of yoga practice that, ,yoga could be incorporate to inculcate and enhance various emotional competences and efficiencies among students along with the present educational setup. Khalsa, Shorter, Cope, Wyashak and sklar (2009) suggest that yoga and meditation techniques can reduce performance anxiety and mood disturbance in young professional musician. Yang, Su and Huang (2009) conclude that the meditation can help students to adapt to life stressors. Samani chaitya prajna (2009) observed positive effect of yoga exercise on mental ability of school children.

Dhungel et al (2008) have conducted a study on the effect of alternate nostril breathing exercise on cardio respiratory functions, Pranayama (breathing exercise), one of the yogic techniques can produce different physiological responses in healthy individuals. Conducted a study on the effect of alternate nostril breathing exercise on cardio respiratory function, Pranayama (breathing exercise), one of the yogic techniques can produce different physiological responses in healthy individuals. The responses of alternate Nostril Breathing (ANB) the Nadisuddhi Pranayama on some cardiorespiratory functions were investigated in healthy young adults. The subjects performed ANB exercise (15 minutes every day in the morning) for four weeks.

Cardio-respiratory parameters were recorded before and after 4 weeks training period. A significant increment in peak expiratory flow rate (PEFR L/ min) and pulse pressure (pp) was noted. Although Systolic blood pressure (SBP was decreased insignificantly; the decreases in pulse rate (PR), respiratory rate (RR), diastolic blood pressure (DBP) were significant. Results indicate that regular practice of ANB (Nadisuddhi) increases parasympathetic activity.

Bhutkar et.al (2008) have conducted efrect of practice of 'surryanamaskar' in improving the cardio –respiratory fitness. The present study was conducted on 78 subjects. (48 males and 30 females). It was observed that 6 months of suryanamaskar practice decreases resting pulse rate and blood pressure. At the same time it increases cardio-respiratory efficiency and respiratory capacity as evaluated by bicycle Aerometry and various lung infections tests, in both male and female subjects. From this study we conclude that surya namaskar practice can be advocated to improve cardio-respiratory efficiency for patients as well as healthy individuals.

Upadhyay Dhungel K.et.al (2008) has coundected the study of find out of " Effect of Alternate Nostril Breathing exercise on Cardio respiratory functions." The study contains the following. Pranayama (breathing exercise), one of the yogic techniques can produce different physiological responses in healthy individuals. The responses of alternate Nostril Breathing in healthy young adults. The subjects performed ANB exercise (15 minutes every day in the morning) for four weeks. Cardio-respiratory parameters were recorded before and after 4 weeks training period. A significant increment in peak expiratory flow rate (PEFR L/min) and pulse training pressure (PP) was noted. Although systolic blood pressure (SBP) was decreased insignificantly, the decreases in pulse rate (PR), respiratory rate (RR), diastolic blood decreased insignificantly, the decreases in pulse rate (PR), respiratory rate (RR), diastolic blood pressure (DBP) were significant. Results indicate that regular practice of ANB (Nadisudhi) increases parasymhatic activity.

Jadhav and Havalappanavar (2008) have coundected studied the effect of yoga intervention on anxiety and subjective well-being. It was found that there was a significant decrease in both state and trait anxiety levels and positive change in the subjective wellbeing of the students. On studying "Breakfast eating habit and its influence on Attention-concentration, immediate memory', on 379 urban 11 to 13

years old school children studying in 6th ,7th and 8th grade. It was found that regular habit of eating breakfast as opposed to irregular consumption or skipping breakfast altogether had beneficial influence on attention-concentration, memory and school achievement (Gajre, Fernandez, Balakrishna and Vazir 2008).

Jesintha and Partiban, (2007) have conducted studied the influence of yogic practices on resting pulse rate, breath holding time and cardio respiratory endurance of school kho-kho players. For the study thirty two school girls who were studying in government higher secondary school kalanivasal, pudukkottai district, Tamilnadu, India were selected as subjects randomly and assigned to two groups. Group I underwent yogic practices (n=16) and group II (n=16) acted as control group. The data collected from the groups were statistically analyzed with analysis of covariance (ANCOVA). Resting pulse rate, breath holding time and cardio respiratory endurance showed significant difference between the groups.

Ramesh, et.al., (2007) Find out the study was effect of selected yogasanas and pranayama on selected physical and physiological variables of school boys. Agility, flexibility, systolic blood pressure, diastolic blood pressure and pulse rate were selected as variables of the study. Thirty school boys were selected randomly as subjects. Their ages ranged from twelve to fifteen years. They were divided into two equal groups and assigned as experimental and control groups. The changes in the selected parameters were attributed to the regular practice of yogasana and pranayama training. The results indicated significant increase in the efficiency of selected variables during eight weeks of training.

Shenbagavalli and Rajakumar, (2007) conducted investigated the effect of pranayama on selected physiological variables among men volleyball players. Twenty four male subjects for this study were selected randomly from Dr. Sivanthi Aditanar College of physical education, tiruchendur and divided into two groups as experimental and control groups. Data were collected from each subject and after the training. The collected data were statistically analyzed by using analysis of covariance (ANCOVA). It was found that there was significant difference on selected physiological variables of resting pulse rate, breath holding time and diastolic blood pressure of experimental group when compared to the control group.

Padmadevi, (2007) the investigated the effects of yogic practices, physical exercises and combination of both trainings on selected physiological and psychological variables of college girls. The resting pulse rate, cardio respiratory endurance and breath holding time as physiological variables. One hundred and twenty and college women students were selected as subjects at random and their ages between seventeen to twenty years. Further, they were divided into four groups and the treatment was given as follows. Group I physical training, group II yogic practices and group III combination of both the training and post test was conducted after six weeks of treatment. Analysis of covariance was used to find out the significant effects of the treatment groups. Scheffes's post hoc test was used to find out the paired mean significant difference. It was conducted that combination of both the training improves all the variables than other trainings.

Samsudeen and Kalidasan,(2007) have investigated the influences of game specific field training and yogic practices on physical, physiological, psychological and performance variables among college level cricketers. Four matched group each having sixteen boys of eighteen to twenty five years of age served as subjects. Group I was involved in game-specific field training, group II was given game specific field training combined with yogic practices, group III underwent yogic practices alone and group IV (control) was not exposed to any specific training or conditioning. The training was administered for a period of twelve weeks, six days a week, two sessions each day and each game specific field training session lasted two hours. Yogic practices were met out for 45 minutes to group I and group II was given game specific field training combined with yogic practices, group III underwent yogic practices alone and group IV (control) was not exposed to any specific training or conditioning. The training was administrated for a period of twelve weeks, six days a week, two sessions each day and each game specific field training session lasted two hours. Yogic practices were met out for 45 minutes to group I and group III. Flexibility, endurance, resting pulse rate, breath holding time, sports competitive anxiety, self confidence, and technical skill level were selected as parameters for the study. The standardized test was administrated before and after the experimental treatment for all parameters barring technical skill. Three qualified coaches subjectivity rated the

technical skill level of each player before and after the treatment. Analysis of covariance was used to analyze the collected data the results indicated that the training groups I and group II produced positive impact on all the selected parameters. The analysis also revealed that game-specific field training combined with yogic practices (group II) showed significant improvement on all selected on all selected parameters among cricket players.

Ramesh, et.al (2007) study was coundected investigated the effect of selected yogasanas and pranayama on selected physical and physiological variable of school boys. Agility, flexibility, systolic blood pressure, diastolic blood pressure and pulse rate were selected as variables of the study. 30 school boys were selected randomly as subjects. Their ages ranged from 12-15 years. They were divided into two equal groups and assigned an experimental and control groups. The changes in the selected parameters were attributed to the regular practice of yogasana and pranayama training. The results indicated significant increases in efficiency of selected variables during eight weeks of training.

Jesintha and Parthiban (2007) found studied the influence of yogic practices on resting pulse rate, breath holding time and cardio respiratory endurance of school kho-kho players. For the study 32 school girls who were studying in Government Higher Secondary School in Kalanivasal, pudukkottai Disrtict, Tamil nadu, India were selected randomly and assigned to two groups. Group I underwent yogic practices (n=6) and Group II(n=16) acted as control group. The data collected from the groups were statistically analyzed with analysis of covariance (ANCOVA). Resting pulse rate, breath holding time and cardio respiratory endurance shoed significant difference between the groups.

Padmadevi, (2007) investigated the effects of yogic practices, physical exercises and combination of both the training on selected physiological and psychological variables of college girls. The resting pulse rate, cardio respiratory endurance and breath holding time as physiological variables and anxiety, aggression, achievement motivation and self confidence as psychological variables. A hundred and twenty college women students were selected as subjects at random the age group of 17 to 21 years. Further, they were divided into four equal groups and the treatment was given as follows. Group I – physical training, group II – yogic practices, group III

- combination of both the training. And group IV- control group. Pre test was conducted for the entire four groups prior to the training and the post test was conducted after six weeks of experimental treatment. Analysis of covariance was used to find out the significant effects of the treatment groups. Scheffe's post hoc test was used to find out the paired mean significant difference. It was concluded that combination of both trainings improves all the variables.

Jesintha and Partiban (2007) find out the studied the influence of yogic practices on resting pulse rate, breath holding time and cardio respiratory endurance of school kho-kho players. For the study 32 school girls who were studying in Government higher secondary school in Kalanivasal, pudukottai District, and Tamilnadu, India were selected randomly and assigned to two groups. Group I underwent yogic practices (n=16) acted as control group. The data collected from the groups were statistically analyzed with analysis of covariance (ANCOVA). Resting pulse rate, breath holding time and cardio respiratory endurance showed significant difference between the groups.

Shenbagavali and Raj Kumar (2007) have investigated the effect of pranayama on selected physiological variables among men volleyball players. Twenty four male subjects for this study were selected from Dr. Sivanthi Aditanar College of physical education, tiruchendur randomly and divided into two groups as experimental and control groups. Data were collected from each subject before and after the training. The collected data were statistically analyzed by using analysis of covariance (ANCOVA). It was found that there was significant difference on selected physiological variables of resting pulse rate, breath holding time and diastolic blood pressure in the experimental group when compared to the control group.

Ivin Jabakumar (2007) has conducted a study on comparison of selected physical and physiological parameters between moderate altitude and sea level inhabitants. For the purpose, twenty five sea level inhabitants from Chennai and twenty five moderate altitude inhabitants from kodaikanal were selected as subjects. Their age ranged from 18-25 years. The physical fitness variables (speed, agility, endurance) were selected and tested using 50 mts dash, shuttle run cooper is 12 minutes run/walk respectively physiological variables such as breathe holding tune, pulse rate, blood pressure were selected and tested. The results of the study were there

was significant difference in agility and breath holding time there was no significant between sea level and moderate altitude inhabitants on other selected variables.

Ramesh, et.al (2007) finds out the effect of selected yogasanas and pranayama on selected physical and physiological variable of school boys. Agility, flexibility, systolic blood pressure, diastolic blood pressure and pulse rate were selected as variables of the study. 30 school boys were selected randomly as subjects. Their ages ranged from 12-15 years. They were divided into two equal groups assigned an experimental and control groups. The changes in the selected parameters were attributed to the regular practice of Yogasana and pranayama training. The results indicated significant increases in efficiency of selected variables during eight weeks of training.

Shenbagavalli and Raj Kumar (2007) find out the effect of pranayama on selected physiological variables among men volleyball players. Twenty four male subjects for this study were selected from Dr. Sivanthi Aditanar College of physical education, Tiruchendur randomly and divided into two groups as experimental and control groups. Data were collected from each subject before and after the training. The collected data were statistically analysed by using analysis of covariance (ANCOVA). It was found that there was significant difference on selected physiological variables of resting pulse rate, breath holding time and diastolic blood pressure in the experimental group when compared to the control group.

Rajkumar (2007) conducted a study on effect of yogic practices and physical exercises on selected physical and physiological parameters on football players. He concludes that yogic practice groups showed significant change in flexibility. Resting pulse rate, breath holding time and peak flow rate among the football players.

Jesintha and Partibhan (2007) have studied the influence of yogic practices on resting pulse rate breath holding time and cardio respiratory endurance of school kho-kho players. For the study 32 school girls who were studying in government higher Secondary School in Kalanivasal, pudukottai District, and Tamilnadu, India were selected randomly and assigned to two groups. Group I underwent yogic practices (n=16) and group II (n=16) acted as control group. The data collected from the groups

were statistically analyzed with analysis of covariance (ANCOVA). Resting pulse rate, breath holding time and cardio respiratory endurance showed significant difference between the groups.

Ramesh (2007) find out the effect of selected yogasanas and pranayama on selected physical and physiological variable of school boys. Agility, flexibility, systolic blood pressure, diastolic blood pressure and pulse rate were selected as variables of the study. 30 school boys were selected randomly as subjects. Their ages ranged from 12-15 years. They were divided into two equal groups and assigned an experimental and control groups. The changes in the selected parameters were attributed to the regular practice of yogasana and pranayama training. The results indicated significant increases in efficiency of selected variables during eight weeks of training.

Sakthi Gnanavel a Buvaneswari (2006) have counducted the effect of selected psycho-physiological variables of working women. Fifteen normal female volunteers had undergone eight week training programme on Asanas, Pranayama and meditation. The suitable psychological parameters (personal stress and health systems) and physiological parameters (pulse rate and heart rate) were taken before and after the yoga practice programme. The results showed that there is greater improvement in all aspects of experimental group than the control group.

Aruna et.al (2006) have counducted the studied the influence of cognitive style, intelligence and classroom climate on process outcomes in science by taking a sample of 1000 pupils of standard IXth of secondary school of kerala through proportionate stratified sampling techniques and found that boys and girls differ significantly at 0.01 level in the mean scores of cognitive style, intelligence, classroom climate and dependent variable process outcomes in science; urban and rural school students were not significant at 0.o5 level with regard to cognitive style and the high mean score was associated with urban subjects; government and private school students were not significant at 0.05 level for cognitive style and intelligence ; the relationship between cognitive style and process outcomes in science was significant, positive but low; cognitive style and intelligent significant effect on process outcomes in science; the main effect of cognitive style and intelligence on process outcomes in science was significant implies that the level of process outcomes

in science was different for different levels of cognitive style and intelligence.

Preiss and Franova (2006) have analyzed the relationship between depressive symptoms, academic achievement and intelligence. The sample consisted of 635 school children comprising 304 boys and 331 girls. The data was collected by using wechsler's intelligence scale for children and grade point average was taken as measure of academic achievements. The findings indicated that the academic achievement was significantly related with intelligence.

Santosh, K. KOhli T. and Batani, D (2005) the Experimental evaluated the impact of yogic shatkriyas and pranayama on stress of senior secondary students. The sample of the present comprased 60 secondary school students, with high academic records. The pre and post experimental and control group design was followed. There were two experimental and one control group. One group was provided any training. Shatkriyas and pranayama both reduce all the components of academic stress of students with equal effectiveness except academic anxiety which was reduced more effectively by Pranayama as compared to shatkriyas.

Madanmohan and Associates (2005) planned to undertake a comparative study of the "Effect of short term (three weeks) training in savitri (slow breathing) bastrika (fast breathing) pranayama on respiratory pressures and endurance, reaction time, blood pressure, heart rate, rate-pressure product and double product". Thirty student volunteers were divided into two groups of fifteen each. Group I was given training in savitri pranayama that involves slow, rhythmic, and deep breathing. Group II was given training in bhastrika pranayama, which is bellows –type rapid and deep breathing. Parameters were measured before and after three week training period. Savitri pranayama produced a significant increase in respiratory pressures and respiratory endurance. In both the groups, there was an appreciable but statistically insignificant shortening of reaction time. Heart rate, rate-pressure product and double product decreased in savitri pranayama group but increased significantly in bhastrika group. It is concluded that different types of pranayama produce different physiological responses in normal young volunteers.

Brown and Gerbarg (2005) have found yogic breathing is a unique method for balancing the autonomic nervous system and influencing psychological and stress

related disorders. Part I of this series presented a neurophysiologic theory of the effects of Sudarshan Kriya Yoga (SKY). Part II will review clinical studies, our own clinical observations, and guidelines for the safe and effective use of yoga breath techniques in a wide range of clinical conditions. Although more clinical studies are needed to document the benefits of programs that combine pranayama (yogic breathing) asanas (yoga postures) and meditations, there is sufficient evidence to consider Sudarshan Kriya Yoga to be a beneficial, low risk, low cost adjunct to the treatment of stress, anxiety, post-traumatic stress disorder (PTSD) in survivors of mass disasters. Yoga techniques enhance well being mood, attention, mental focus and stress tolerance. Proper training by a skilled teacher and a 30 minute practice every day will maximize the benefits. Health care providers play a crucial role in encouraging patients to maintain their yoga practices.

P.S Singh (April 2005) have conducted in 20 patients of type II diabetes Mellitus. It provides metabolic and clinical evidence on improvement in glycaemic control and autonomic function. Patient's age ranged from 35-55 years and all were of antihyperglycaemic and dietary regimen. Their baseline fasting and postprandial blood glucose as well as glycosylated Hb was monitored along with autonomic function studies. These patients were given training in pranayama for 35 minutes/day for 90 days under guidance. Pranayam consisted of Ujjai, Bhastrika, Omkar and Sudarshan kriya. After 3 months of pranayama the parameters were repeated. The results indicate that there was significant decrease in fasting blood glucose levels basal 190+18 to 140+16 mg% and postprandial level decreased from 280+20 to 200+ 18 mg%. Glycosylated Hb showed a decrease from 10+ 0.30 to 7.80= 0.5 after pranayam. Pulse rate, systolic and diastolic BP decrease significantly after pranayam. Findings suggest better glycaemic control and stable autonomic BP decrease significantly after pranayam. Findings suggest better glycaemic control and stable autonomic function in type II diabetes with regular Pranayam. However exact mechanism as to how pranayaam interact with somato-neuroendocrine mechanism affecting metabolic and autonomic function remains to be worked out.

Sinha B.et.al. (2004) coundected the study done a research on "Energy Cost and CArdiorespiratory Changes during the practice of surya Namaskar". The study contains the following. Surya Namaskar (SN). A group of Surya Yogic exercise

consists of a set of twelve postures which is practiced by some of the yoga practitioners. The present study was undertaken to observe critically the energy cost and different cardio respiratory changes during the participate of SN. Twenty –one male volunteers from the Indian army practiced selected yogic exercises for six days in a week for three months duration. The yogic practice schedule consisted of Hatha yogic Asanas (28 min), pranayama (10.5 min) and meditation (5min). in the yogic practice schedule 1st they practiced kapal bhati (breathing maneuvers) for 2 min then yoga mudra (yogic postural exercise) for min, after that they took rest until oxygen consumption and heart rate (HR) came to resting value. Subsequently subjects performed SN for 3 min 40 seconds on an average. After three months of training at the beginning as they practiced during their training session and experiments were carried out. Their pulmonary ventilation, carbon dioxide output, oxygen consumption, HR and other cardio respiratory parameters were measured during the actual practice of SN. Oxygen consumption was highest in the eight posture (1.22+/- 0.073 1 min (-1)) and lowest in the first posture (0.35+/-0.021 min (-1). Total energy cost throughout the practice of SN was 13, 91 kcal and at an average of 3.79 kcal/mi. during its practice highest HR was 101+/-13.5 bpm. As an aerobic exercise SN seemed to be ideal as it involves both static stretching and slow dynamic component of exercise with optimal stress on the cardio respiratory system.

Harinath et.al., (2004) have conducted the study on effects of Hath yoga and Omkar meditation on cardio respiratory performance, psychological profile and melatonin secretion. Thirty healthy men in the age group of 25-35 years volunteered for the study. They were randomly divided in two groups of 15 each. Group 1 subjects served as controls and performed body flexibility exercises for 40 minutes and slow running for 20 minutes during morning hours and played games for 60 minutes during evening hours daily for 3 months. Group 2 subjects practiced selected yogic asanas (postures) for 45 minutes and pranayama for 15 minutes during the morning, whereas during the evening hours these subjects performed preparatory yogic postures for 15 minutes, pranayama for 15 minutes and meditation for 30 minutes daily, for 3 months. Orthostatic tolerance, heart rate, blood pressure, respiratory rate, dynamic lung function (such as forced vital capacity, forced expiratory volume in 1 second, forced expiratory volume percentage, peak expiratory flow rate and maximum voluntary ventilation), and psychological profile were measured before and after 3 months of

yogic practices. Serial blood samples were drawn at various time intervals to study effects of these yogic practices and omkar meditation on melatonin levels. Yogic practices for 3 months resulted in an improvement in cardio respiratory performance and psychological profile. The plasma melatonin also showed an increase after three months of yogic practices. The systolic blood pressure, diastolic an increase after three months of yogic practices. The systolic blood pressure, diastolic blood pressure, mean arterial pressure, and orthostatic tolerance did not show any significant correlation with plasma melatonin. However, the maximum night time melatonin levels in yoga group showed a significant correlation ($r=0.71$, $p<0.05$) with well being score. These observations suggest that yogic practices can be used as psycho physiologic stimuli to increase endogenous secretion of melatonin which in turn might be responsible for improved sense of well-being.

Bera (2004) and Govindarajulu, Murugesan & bera (2002), found increase oxygen consumption and work capacity in school students. Vempati and Bijlani (2004) noticed significant improvement in Bronchial Asthma of yoga practitioners. Khubalkar (2004) examined psycho- physiological effect of integral Meditation. Bhatt (2005) found positive benefits of yoga on the health (Hemoglobin, weight and memory) of school children, streamer (2007) demonstrates that in experienced yoga practitioners, brain GABA levels increase after a session of yoga.

Furthamand Tomas (2004) have conducted a study on personality and intelligence as predictors of statistic examination grades. A total of 91 students entailing 74 female and 17 male British college students participated in the study. A significant and positive association between statistic examination grade and intelligence was found.

Manjunath N (2004) have conducted the study was effect of yoga on group of 30 healthy subjects and found significant increase in of 43% in spatial memory scores which is similar to the result of memory but not in verbal memory after the practice of our breathing practices (pranayama practice). Blakeslee (1980) stated that the left hemisphere is more involved with verbal memory while the right hemisphere is more involved with the recall of non verbal spatial information. In this study of Nuveen et al it appears that there was no specific lateralized effect of breathing through a particular nostril. The performance also did not appear to be related to the nostril.

Barshankar, et.al (2003) to examined the effect of yogic on cardiovascular function in subjects above 40 years of age. Pulse rate, systolic and diastolic blood pressure and Valsalva ratio were studied in 50 control subjects (not doing any type of physical exercise) and 50 study subjects who had been practicing yoga for 5 years. From the study it was observed that significant reduction in the pulse rate occurs in subjects practicing yoga ($p<0.001$). the difference in the mean values of systolic and diastolic blood pressure between study group and control group was also statistically significant ($p<0.001$ respectively) the systolic and diastolic blood pressure showed significant positive correlation with age in the study group (rl Systolic=0.631 and rl diastolic=0.610) as well as in the control group (r2 systolic =0.981 and r2 diastolic=0.864). the significance of difference between correlation coefficient of both the groups was also tested with the use of Z transformation and difference was significant (Z systolic=4.041 and Z diastolic =2.901). Valsalva ratio was also found to be significantly higher in yoga practitioners than in controls ($p<0.001$). Our results indicate that yoga reduces the age related deterioration in cardiovascular functions.

Barshankar (2003) to examine the effect of yoga on cardiovascular function in subjects above 40years of age. Pulse rate, systolic and diastolic blood pressure and Valhalla ratio were studied in 50 control subjects (not doing any type of physical exercise) and 50 study projects that had been practicing yoga for 5 years. From the study it was observed that significant reduction in the pulse rate occurs in subjects practicing yoga ($p<0.001$). The difference in the mean values of systolic and diastolic blood pressure between study group and control group was also statistically significant ($p<0.01$ and $p<0.001$ respectively). The systolic and diastolic blood pressure showed significant positive correlation with age in the study group (rl systolic+0.631 and rl diastolic=0.610) as well as in the control group (r2 systolic =0.981 abd r2 diastolic= 0.864). The significance of difference between correlation coefficient of both the groups was also tested with the use of Z transformation and the difference was significant (Z systolic=4.041 and Z diastolic= 2.901). Valsalva ratio was found to be significantly higher in yoga practitioners than in controls ($p<0.001$). our results indicate that yoga reduced the age related determination in cardiovascular functions.

De Smedt et al. (2003) the investigated pre-academic and early academic achievements in children with velocardio facial syndrome of borderline or average intelligence. In the sample 13 children from primary school in Flanders were tested on reading, spelling and mathematics. No difference in intelligence and academic achievement were found between the children with cardiac defects and children with average intelligence.

McManuset al. (2003) has conducted a study on intelligence as predictors of medical carrier among the doctors through 20 years prospective study. Data were gathered from 511 doctors who entered westminister medical school as clinical students. The results indicated intelligence did not independently predict the career outcome or academic achievement.

Petrideset al (2002) studied the role of trait intelligence in academic performance and deviant behavior at school on a sample of 650 pupils in British Secondary education. The results demonstrated that emotional intelligence was related to scholastic achievement.

Lohan and Rajesh (2002) the condected studied the effect of asanas and pranayamas on physical and physiological components of boys between age group 12 -16 years. One hundred and twenty subjects were equally programme was given to test the abdominal strength, speed, agility powere and endurance by using AAPHER Youth fitness scores were analysed by using ANCOVA. It was concluded that physical and physiological fitness was improved by the training of selected yogic exercise. The combined group of asanas and pranayama showed significant improvement in the physical and physiological fitness parameters.

Ray (2001) have conducted a study on effect of yogic exercise on perceived exertion (PE) after maximal exercise, forty men from the Indian army aged 19-23 years were administrated maximal exercise on a bicycle ergo meter in a graded workload protocol. The oxygen consumption, carbon dioxide output, pulmonary ventilation, respiratory rate, heart rate at maximal exercise and PE score immediately thereafter were recorded. The subjects were divided into two equal groups. 12 subjects dropped out during the course of the study. One group (yoga, n=170 practiced hatha yogic exercises for 1 hour every morning (6 days in a week) for six

months. The other group (PT, n=11) underwent conventional physical exercise training during the same period. Both groups participated daily in different games for one hour in the afternoon. In the seventh month, tests for maximal oxygen consumption (VO2 max) increased significantly (p, 0.05) in the yoga group helped to improve aerobic capacity and the yoga group performed better than the PT group in terms of lower PE after exhaustive exercise.

Varun (2001) the study was counducted conducted a study on thirty girls of B.P.E 1st year from LNIPE, Gwalior with a purpose to compare the two variables of pranayama i.e anulom vilom and bhastrika, on effect on cardio respiratory endurance. In order to study the comparison of two variables of pranayama of covariance was applied and 0.05 level of significance was chosen to test the hypothesis. It was concluded that there was no significance in any of the factors between the Anulom-vilom of confidence with 9 DF and all the factors were below the table.

Patro (2001) have conducted a study on twenty students of yoga group from LNIPE, Gwalior with a purpose to investigate the effect of jal kapalbhati on selected respiratory variables. The data was obtained from each group comprising of experimental and control group. The initial and final test scores of each group were statistically treated adopting standard statistical procedures. The subjects were selected at randomly. The difference between the initial means of the group at the pretest had to take into account during the analysis of the post-test, difference between the means by the process of application of paired t-test. The statistical analysis was tested for significance at 0.05 levels. It was conducted that the jal kapalbhati Kriya caused significant changes over the respiratory variables namely positive breath holding time and negative breath holding time. The jal kapalbhati /kriya did not cause significant changes in vital capacity and resting respiratory rate.

Maity and Samanta (2001) have conducted a study on the effect of calisthenics and yogasanas on health fitness status of fifth grade girls. Pre test and post test scores of Oregon Health Fitness test obtained from the calisthenics group, yogasana group and control group were analyzed by using‘t’ test after 12 weeks training. It was concluded that (i) improvement of Health fitness as assessed on Oregon Health Fitness Test after 12 weeks of treatment justified the fact that both the programmers of calisthenics and yogasana were effective in developing Health fitness of fifth grade

girls. (ii) Calisthenics exercise programme was found superior to yogasana in improving performance in each individual test item of Oregon Health Fitness test except crossed arm-curl ups. Gharote (1979) administrated sit-ups test to note the strength and endurance of the abdominal muscles. 20 female subjects were given yogic exercise for duration of three weeks. He noticed significant muscles of 12 subjects. Physical activity from 24 hour activity records for three days, two week days and one weekend day. Health related fitness was assessed as the one mile run (cardio respiratory endurance), timed sit-ups (abdominal strength and endurance) sit and reach (lower back flexibility), and subcutaneous fatness (sum of the triceps, sub scapular suprailiac, and medical calf skin folds). Physical activity is significantly and positively correlated with one mile run performance and sit and reach but not with sit ups and subcutaneous fatness. Over all, the strength of the relationship between estimated energy expenditure and specific fitness items in the total sample vary from low to moderate, with only 1% to 12% of the variance in fitness variables being explained by estimated energy expenditure comparisons of active versus inactive and fit versus unfit adolescents provide additional insights. The more active (highest quartile) are also more fit in the one mile run (better tune lowest quartile) and the sit and reach (highest quartile) are more active than the less fit in the each item respectively.

Ray (2001) has conducted a study on the effect of yogic exercise on prerecived exertion (PE) after maximal exercise on a bicycle ergo meter in a graded workload protocol. The oxygen consumption, carbon-di-oxide output, pulmonary ventilation, respiratory rate, heart rate at maximal exercise and PE score immediately thereafter were recorded. The subjects were divided into two equal groups. 12 subjects dropped out during the course of the study. One group (yoga, n=170 practiced hatha yogic exercises for 1 hour every morning (6 days in a week) forsix months. The other group (PT, n=11) underwent conventional physical exercise training during the same period. both groups participated daily in different games for one hour in the afternoon. in the seventh month, tests for maximal oxygen consumption (VO2 max) increased significantly (p,0.05) in the yoga group helped to improve aerobic capacity and the yoga group performed better than the PT group in terms of lower PE after exhaustive exercise.

Ray ET. Al, (December 2001) this condected study was to reports on the effect of yogic exercises on aerobic capacity are few. There is also no literature available on the effect of yogic exercise on perceived exertion (PE) after maximal exercise. In this study the effect of training in hatha yogic exercises on aerobic capacity and PE after maximal exercise was observed. METHODS: forty men from the Indian army (aged 19-23yr) were administrated maximal exercise on a bicycle ergometer in a graced work load protocol. The oxygen consumption, carbon dioxide output, pulmonary ventilation, respiratory rate, heart rate (HR) etc, at maximal exercise and PE score immediately thereafter were recorded. The subjects were divided into two equal groups. Twelve subjects dropped out during the course of study. One group (yoga, n=17) practiced Hatha yogic xercises for 1 have every morning (6 days in a week) for a six months. The other group (P.T, n=11) underwent conventional physical exercise training during the same period. Both groups participated daily in different games for 1 h in the afternoon. In the 7th month, tests for maximal oxygen consumption (VO2 max) and PE were repeated on both groups of subjects. RESULTS: Absolute value of VO2 max increased significantly ($p<0.05$) in the yoga group after 6 months of training. The PE score after maximal exercise decreased significantly ($P<0.001$) in the yoga group after 6 months but the PT group showed no change. INTERPRETATION & CONCLUSION: the practice of Hatha yogic exercises along with games helps to improve aerobic capacity like the practice of conventional exercises (PT) along with games. The yoga group performed better than the PT group in terms of lower PE after exhaustive exercise.

Mridula and Sinha (2001) hav conducted studied the effect of yogic practices on depression and anxiety on 25 adults (12 male and 10 female) in the age range of 22 to 70 years suffering from gastrointestinal problems and also hyper anxiety and depression. Tools; for anxiety-state trait anxiety inventory (STAI) by spiel Berger (1970) and for depression scales of symptomatic check list (SCL) by R.L.Dergo gaits (1981). Method practiced: yogic practices of Asana, pranayama, mudra, Prayahara, Dharana and dhyana for 15 days. Results Remarkable reduction in levels of both anxiety and depression.

Murugensan, Govindarajan and Bera (2000) have Conducted a study on the basis of medical officers diagnosis, thirty three (N=33) hypertensive aged between 35

and 65 years, from the Government general hospital, Pondicherry, were examined with four variables viz. Systolic and diastolic blood pre sure, pulse rate and body weight. The subjects were randomly assigned into three groups. The experimental group -1 underwent selected yoga practices, experimental group-II received medical treatment by the physician of the said hospital and the control group did not participate in any of the treatment stimuli. Yoga training was imparted in the morning and in the evening with 1 hour /session/day for a total period of 11 weeks. Medical treatment comprised drug intake everyday for the whole experimental period. The result of pre-post with ANCOVA revealed that both the treatment stimuli (i.e yoga and drug) were effective in controlling the variables of hypertension.

Manjunath and Telles (1999) started that another complex function with improved after following yoga was visual. Children aged between 12 and 17 years were studied as two groups, yoga and non-yoga (control), using two tests for visual perception viz., the critical ficker fusion frequency (CCF) and a test for optical illusion. After practicing yogasanas, pranayamas, Kriyas, meditation and Bhajanas along with specially designed games. On experimental group, it was found that there was a significant increase in CCF(92%) and decrease in degree of illusion (24.89% for its trails and 31.05% out of trails). While the control group showed no change. It suggested that younger subjects can show better improvement in performance in a relatively short duration as compared to previous reports.

P.raghuraj, A.g. RAmakrishnan (1998) Find out the study was “effect of two selected yogic Breathing Techniques on Heart Rate Variability” the heart rate variability (HRV) is an indicator of the cardiac autonomic control. Two spectral components are usually recorded, viz.high frequency (0.15-0.50 Hz), which is to duo to vasgal efferent activity and a low frequency component (0.05-o.15 hz), due to sympathetic activity. The present study was conducted to study the HRV in two yoga practices which have been previously reported to have opposite effects, viz, sympathetic stimulation (kapalabhati, breathing at high frequency, i.e 2.0 Hz) and reduced sympathetic activity (nadisuddhi, alternate nostril breathing). Twelve male volunteers (age range, 21 to 33 years) were assessed before and after each practice on separate days. The electrocardiogram (lead I) was digitized on line and off-line analysis was done. The results showed a significant increase in low frequency (LF)

power and LF/HF while high frequency (HF) power was significantly lower following kapalabhati. There were no significant changes following nadisuddhi. The results suggest that kapalabhati modifies the autonomic status by increasing sympathetic activity with reduced vagal activity. The study also suggests that HRV is a more usefull psychophysiological measure than heart rate alone.

Naveen, Nagarathana, Nagendra and Telles (1997) in another study found that school children between the ages of 10 to 17 years showed that significant improvement in their scores in a right cerebral hemisphere-specific memory task. In this study 135 school children were categorized into 5 groups (with 27 children in each group). Four of the groups practiced different and specific yoga breathing techniques, while the fifth group was a non-yoga group. All the five groups were assessed at the beginning and end of of the 10 day experimental period using two tests, one for verbal memory scores and the other for spatial memory. In both the yoga and the non yoga groups the scores in the verbal memory tasks remained unchanged. However the four 'yoga' groups showed an 84% increase in spatial memory scores. The results suggesting that the right hemisphere specific spatial memory function improved significantly following yoga, irrespective of the specific yoga technique practiced.

Telles et al. (1994) this pranayama is also known as alternate nostril breathing as the thumb of the right hand is used to close the left nostril. One round consists if inhaling through one nostril for a defined length of time (varying from person to person) and exhaling for the same length of time the same side. This nostril is then closed and the same breath is repeated through the other nostril. In a controlled study is shown that breathing through the right nostril resulted In a significant increase of 37% in baseline oxygen consumption, alternately breathing through both nostrils showed and 18% increase while breathing through the left nostril resulted in a 24% increase. The left nostril pranayama group showed an increase in volar galvanic skin resistance, the electrical resistance of the skin which is a measure of emotions in people that is part of the polyhraph test. Fear, anger, startle response, sexual feelings are all among the emotions which may produce similar GSR responses. An increase is interpreted as a reduction in sympathetic nervous system activity.

Raju, P.S.Madhavi.S.Prasad, K.V, Reddy, M.V. Reddy M.E, Sahay B.K and Murthy, K.J (1994) showed in their study the comparison of effects of Yoga & physical exercise in athletes. The effect of pranayama a controlled breathing practice, on exercise tests was studied in athletes in two phases; sub maximal and maximal exercises test. The results in both phases showed that the subjects who practiced Pranayama could achieve higher work rates with reduced oxygen consumption per unit work and without increase in blood lactate levels.

Telles, S. Hanumanthaiah, B, Nagartna R, and Nagendra, H.R (1993) suggested the improvement in static motal performance following yogic training of school on a steadiness test, at the beginning and again at the end of a 10 day period during which one group received training in Yoga, while the other group did not. During the 10 day period, one group (the group) received training in special physical postures (asanas), voluntary regulation of breathing (pranayama), maintenance of silence, as well as visual focusing exercises (tratakas) and games to improve the attention span and memory. The other group (control) arried out their usual Yoga-ranks test) decrease practice can bring about peace of mind, beauty, motivation, emotional control, intelligence and concentration.

Telles et.al.(1993) viloma means against the natural order of things. In viloma pranayama, inhalation or exhalation is done with several pauses. It teaches pauses. It teaches the practitioners how to fully utilize the entirety of the rib cage and how to direct the breath into specific areas of the chest ensuring a deep breath. Viloma can also be practiced through alternate nostrils and is called anuloma viloma. Viloma aerates the lungs and improves the muscle tone of the brething muscles. Both anuloma viloma and viloma have been said to lower blood pressure, however the only controlled scientific study showed that there was an increase in systolic blood pressure probably due to cutaneous vasoconstriction as shown by the simultaneous decrease in digit pulse volume.

Nummila Amero and Rusko (1992) had supported the study to investigate whether the sprint training, induced changes in the different components of aerobic performance capacity can be determined by the maximal anaerobic running power test. During the training period, VO2 max increased, the correlation analysis revealed that the high volume of speed endurance training influenced negatively VO2 max and

blood lactate concentration. The volume of the interval training at low intensity correlated positively with the change of VO2 max. The volume of speed training was found to be advantages for the changes in VO2max. It was concluded that the results of the test reflect the sprint training induced changes in the anaerobic performance capacity.

Satyanarayana, (1992) found santhi Kriya is a mixture of combined yogic practices of breathing and relaxation. Preliminary attempts were made to determine the effect of santhi Kriya on certin psycho physiological parameters. Eight healthy male volunteers of the age group 25.9 +3(SD) years were subjected to santhi kriya practice daily for 50 minutes for 30 days. The volunteers body weight; blood pressure, oral temperature, pulse rate, respiration; ECG and EEG were recorded before and after the practice on the 1st day and subsequently on 10th, 20th and 30th day of their practice. They were also given a perceptual acuity test to know their cognitive level on the 1st day and also at the end of the study i.e on the 30 the day. Results indicate a gradual and significant decrease in the body weight from 1st to 30th day (p less than 0.001) and an increase in alpha activity of the brain. (p less than 0.001) during the course of 30 days of Santhi Kriya practice. Increase of alpha activity both in occipital and prefrontal areas of both the hemispheres of the brain denotes an increase of calmless. This study also revealed that Santhi Kriya practice increases oral temperature by 3 degrees F and decreases respiratory rate significantly (p less than 0.05) on all practice days. Other parameters were not found to be altered significantly. It is concluded that the Santhi kriya practice for 30 days reduces body weight and increases calmness.

Eckerson and Anderson (1992) have conducted a study to determine the heart rate (HR) and oxygen uptake (VO2 max) measured during water aerobics (WA) and were compared to maximal values obtained during an incremental treadmill test to assess the energy demand and potential cardio respiratory (CR) training effects of WA. Sixteen college females served as subjects (mean+SD=20.4+1.6 years). WA elicited a mean HR of 162b.min-1 and a mean VO2 of 18.4ml.kg-1 which represented 74% of HR reserve,, 82% of maximal HR and 48% of VO2Max. Average caloric expenditure was 5.7 kcal./min, HR values for WA were consistent with guidelines established by the American College of sports Medicine for developing and

maintaining CR fitness in healthy adults. However the VO2 max fell just below the recommended minimum threshold level. It was concluded that WA may provide an attractive alternative to traditional models of exercise for improving CR fitness; however, HR measures may over estimate he metabolic intensity of the exercise.

Chinnasamy (1992) have conducted a study on effects on asanas and physical exercise on selected physiological and biochemical variables among school boys. In this study ninety male students were randomly selected from government higher secondary school. The initial scors were measured for the selected physiological and biochemical variables namely pulse rate, systolic blood pressure, diastolic blood pressure, hemoglobin content and blood sugar level. The treatment was given for a period of 6 weeks for the experimental group. The significance of the difference among two kinds of exercise group and asana group for the pre and post test mean gain were determined by 'F' ratio through analysis of covariance. Asanas had significantly improved the hemoglobin content and reduced the blood sugar pulse rate and blood pressure.

Telles and Desiraju (1991) found yogic Ujjayi pranayamic type of breathing that involves sensory awereness and consciously controlled, extremely slow rate breathing including at least a period of and inspiration breath holding in each respiratory cycle that might alter oxygen consumption. Ten males with long standing experience in pranayama, and volunteering to participate in the laboratory study were assessed. These subjects aged 28-59years, had normal health appropriate to their age. Since Kumbhak (timed breath holding) is considered as an important phase of the respiratory cycle in the pranayama, they were categorized into two groups of five each, one group practicing the short Kumbhak varieties of pranayama, and the other the long kumbhak varieties of pranayama. The duration of Kumbhak phase was on an average 22.2 percent of the respiratory cycle in the short Kumbhak group and 50.4 per cent in the long Kumhak group. The oxygen consumption was measured in test sessions using the closed circuit method of breathing oxygen through the Benedict-Roth Spirometer. Each subject was tested in several repeat sessions. Values of oxygen consumption of the period of Pranayamic breathing, and of post pranayamic breathing period of each test session. The results revealed that the short Kumbhak pranayamic breathing caused a statistically significant increase (52%) in the oxygen consumption

(and metabolic rate) compared to the pre pranayamic base line period of breathing. In contrast to the above, the long Kumbhak pranayamic breathing caused a statistically significant lowering (19%) of the oxygen consumption (and metabolic rate). The values returned to near normal in the post pranayamic periods. The data provide a basis to indicate that different types of pranayamic breathing may lead to different types of alterations in the oxygen consumption and metabolic rate.There is increasing interest in the fact that breathing exclusively through one nostril may alter the autonomic functions. Another study aimed at checking whether such changes actually do occur and whether breathing is consciously regulated. 48 male subjects, with ages ranging from 25 to 48 years were randomly assigned to different groups. Each group was asked to practice one out of three pranayamas (viz. right nostril breathing, left nostril breathing or alternate nostril breathing). These practices were carried out as 27 respiratory cycles, repeated 4 times a day for one month. Parameters were assessed at the beginning and end of the month, but not during the practice. The 'right nostril pranayama' group showed a significant increase, of 37% in baseline oxygen consumption. The 'alternate nostril pranayama' a group showed an 18% increase and the left nostril pranayama group also showed an increase, of 24%. This increase in metabolism could be due to increased sympathetic discharge to the adrenal medulla. The 'left nostril pranayama' group showed an increase in volar galvanic skin resistance, interpreted as a reduction in sympathetic nervous system activity supplying the sweat glands. These results suggest that breathing selectively through either nostril could have a marked activating effect or a relaxing effect on the sympathetic nervous system. The therapeutic implications of being able to alter metabolism by changing the breathing pattern have been mentioned (Telles, et.al 1993)

Verma and Gupta (1990) have conducted studied the effect of home environment on cognitive ability of pre-adolescent children. The sample comprised of 160 children studying in eight class of India. The results indicated significant effect of home environment on verbal and non verbal intelligence of only male pre-adolescent children.

Sheikh (1990) counducted studied cognitive style in relation to intelligence, creativity and academic achievements of 185 adolescents of government school. The results indicated that high intelligent and high creative group tends to be

more field independent than average and low intelligent and creative group. Average intelligent groups were more field independent than low intelligent group but high and average creative group do not show any significant difference in the cognitive style; female students had greater field independence than their counterpart male adolescent.

Uma, K, Nagendra, H.R, Nagarathna, R, Vaidehi,s. and Seethlakdhmi, R (1989), have concluded the integrated approach of yoga: a therapeutic tool for mentally retarded children: a one year controlled study. Ninety children with mental retardation of mild, moderate and severe degree were selected from four special schools in Bangalore, India. Forty-Five children underwent Yogic training for one academic year (5h.in every week) with an integrated set of yogic practices, including breathing exercises and pranayama, Sithilikarna, Vyayama (loosening exercises), suryanamaskar, Yogasanas and meditation. They were compared before and after yogic training with a control group of 45 mentally retarded children matched for chronological age, sex,IQ, socio-economic status and socio environmental background who were not exposed to Yoga training but continued their usual school routine during that period. There was highly significant improvement in the IQ and social adaptation parameters in the Yoga group as compared to the control group. This study shows the efficiency of Yoga as an effective therapeutic tool in management of mentally retarded children.

Prabhakar, Chopra and Verma (1989) evaluated effect of yoga comprising of Kriyas (Internal cleaning processes), Asana(postural patterns) and Pranayama (breth control) given over 4-6 weeks to a group of 47 patients suffering from psychogenic headache. Evaluations conducted over a year showed that yoga therapy resulted in a a significant improvement in severity of headache. Evaluation of psychological functions showed a significant reduction in depression, neuroticism, psychiatric disability (personal, social, vocational) and both state as well as trait anxiety.

Barnes and Nagarkar (1989) conducted studied the effect of yoga on scholastic aptitude and intelligence on 40 students of VIII class of Mumbai. After 4 month yoga training given to them 3 hours daily at yoga institute found a positive effect on both scholastic aptitude and intelligence.

Franklin and other (1989) have conducted a study on lean and obese middle aged female subjects who participated in the 12 week aerobic training program. The program was structured along ALSM guidelines, (walking-jogging) 15 to 25 minutes, 4 days per week, 75% max VO2). Normal weight, subjects decreased their body fat from 24.7 to 23.9% obese subjects reduced from 38.0 to 36.2% and the sum of 10 skin folds decreased significantly in both groups. This moderate intensity physical conditioning program affected both obese and learner women in similar fashion.

Nommay (1988) recognized the effects of family structure on intelligence and academic achievement. He analyzed 45 studies from the last 15 years and summarized the results as that parental education and encouragement found to contribute to the cognitive development of their children. Family constellation was appeared to have greater impact on verbal than non-verbal intellence. The result also indicated that intelligence had positive and significant relationship with academic achievement.

A Study Done by King J (1988) on 33 nursing students found that state anxiety levels were reduced at 0.001 levels of confidence due to the relaxation with guided imagery. While in present study also we found that there was significant reduction of state anxiety ($p<0.001$) after the practice of Kapalabhati which is similar to result of king study. Similarly a study done by Telles et al (2008) found increase in sustained attention (SLC) by 32.5%, 16.5% after kapalabhati in middle aged adults and older persons respectively and no change in young medical students. The mechanism underlying the changes in three different groups is not known. But result of middle aged adults and older persons is similar to our study for the SLC and DLC tasks, present results suggest that kapalabhati augments attention, both enhancing performance and reducing distraction. The study found increases in sustained attention scores after practice of both kapalabhati (23.69% & 14.89% for SLC & DLS tasks respectively) (both $p<0.001$) and breath awereness (14.83% & 6.73% for SLC & DLS respectively) (both $p<0.001$) but, again significantly more after kapalabhati than breath awareness (both SLC & DLS $p<0.001$). These results support the idea that kapalabhati is more effective in increasing subjects sustained attention span than breath awareness.

Singh & Madhu (1987) proved favorable effects of yogic practice on short term memory and steadiness of the subjects increased after yogic practices and the

anxiety and feelings of insecurity decreased.

Gore, et al (1987) was conducted a study immediate effect of one minute Kapalabhati on respiratory functions in this study with Twelve healthy subjects from police training school were tested on Collins spirometer for respiratory Rate (RR), Oxygen uptake (OT) and Minute ventilation (MV) before using and other one minute Kapalabhati (KB). Other respiratory parameters such as Inspiratory capacity, Expiratory reserve volume; Vital capacity and Maximum breathing capacity were also studied before and immediately after KB. RR, MV and OT showed respiratory volumes were observed after the performance of one minute KB. However, the oxygen uptake was seen significantly reduced after one minute of KB as compared with the values during KB. It was also less than in the initial normal breathing.

Doner (1976) concluded improvement in mental and physical health in transcendental meditation (TM) practitioners. Fusion (1976) found better mental health in Transcendental Meditation (TM) practicing subjects. Kocher (1976a) suggests that the regular practice of yoga increases both memory and perception. He further suggests (1976b), that the yoga practicner delays mental fatigue.

M. S. Nayer (1975) investigated the effects of yogic exercise on human physical efficiency. The subjects were conducted on 53 cadets of national Defense Academy. The parameters of assessment included ventilation minute volume; rate of respiration, oxygen, consumption, pulse rate, blood pressure, mechanical efficiency and maximum oxygen intake. Four additional assessments were made under resting conditions, viz., vital capacity (VC) minimum breathing capacity (M.B.C) forced expiratory volume (FFV 10 sec) and breath holding time. All 3 groups showed significant decrease in pulse rate during exercise. The yogic group in addition recorded highly significant increases in breath holding time (from 54 to 106 sec. And VC from 1.98 to 2.89 L/M2 body surface area). The remaining two groups recorded only significant increases in VC, ventilation minute volume, rate of respiratory, blood pressure, mechanical efficiency, maximum oxygen intake capacity, and MBC remained undeterred is all 3 groups.

Hubert Dhanaraj (1974) studied the effects of yoga and 5Bx fitness plan on selected physiological parameters. The results indicated increase in basal metabolic

rate, tidal volume in basal state. T-4 thyroxin Hemoglobin. Hemotocried blood cell PWC 130, vital capacity, chest explanation, breath holding time and flexibility after yoga training decreases in heart rate in barrel state and respiratory rate in barrel state also observed. Ehen yogic training was discontinued for six weeks, following the six weeks treatment, a significant declination in values of PWC130, flexibility and breath holding time was noticed.

Baddeley and Hitch (1974) who were explicitly concerned with the relationship between STM and LTM. A series of experiments attempted to block STM in normal subjects by requiring them to recite digit sequences while performing other tasks, such as learning, reasoning or comprehending that were assumed to depend crucially upon STM. Decrement occurred, with the impairment increasing with the length of the digit sequence that was being retained, suggesting that STM and LTM did interact. However the effect was far from dramatic, again calling into question the standard model. Baddeley and hitch proposed that the concept of a simple unitary STM be replaced by a more complex system which they termed "working memory", so as to emphasize its functional importance in cognitive processing.

Gopal (1973) studied the effect of Yogasana and pranayamas on blood pressure, pulse rate and some respiratory functions. Two groups of male volunteers, 20-23 years of age and having the same average height and weight were studied. The experimental group consisted of 14 subjects in Yogasanas and pranayamas for a period of 6 weeks. The control group consisted of 14 normal untrained subjects, who carried out nonyogic exercises I,e long walk and playing light games. Pre and post tests were conducted on both the groups. The results were compared. The trained persons had greater vital capacity, more tidal volume and less respiratory rate than the untrained. The prescribed standard exercise increased the respiratory rate in both the groups but the increase was less in trained group who increased exhibited a corresponding increase in total volume.

Gopal IP, at al (1973) have conducted a study on "Effect of yogasanas and Pranayamas on blood Pressur, pulse rate and some respiratory function." In this study was three groups of male volunteers in the age group of 20-35 years having the same average height and weight were studied. They were divided into 3 groups-yogic,

pranayamas, and nonyogic group and they were given training in their respective groups for six months and assessed for various cardio-respiratory parameters. When assessed after six months the yogic and the Pranayamic group showed decreases in the pulse rate in the yogic and the trained group but not very significantly.

Behanan (1971) viewed that consumption of oxygen increased by 24.5 and 18.5 percent during ujjayi and bhastrika Pranayama respectively. Similarly Miles (1964) measured the consumption of oxygen during ujjayi, Bhastrika, kapalabhati and other pranayama. He concluded that the consumption of oxygen during these three Pranayama increased by 32, 20 and 14 percent respectively. The respiratory rate increased by 3 breaths per minute after Ujjayi and Bhastrika Pranayama, where as it increased by 4 breaths per minute after Kapalabhati. A person who practiced Ujjayi Pranayama at different heights from the sea level found that consumption of oxygen increased by 9 percent at an altitude of 50 meters above mean sea level.

Ksamatsu and Hirai (1966) have conducted research on Buddhist monks and they found reduction in respiration, consumption of oxygen and pulse rate while growth in GSR rate due to practice of Yogic exercises, they observed multiplicity in alpha waves in the brain of these monks. Vanselow (1968) found that T.M has reported to have practical therapeutic value in relieving mental and physical tension.

Apte (1965) found Pranayama is a Sanskrit word composed of the words 'prana; vital lifeforce and "ayama" meaning restraint. The word pranayama thus translates as the regulation ore control of life- force. The word prana has been translated as many things including air, breath, spirit, life force, energy, subtle energy, vital energy, soul and principle of life, all essentially trying to convey the all-pervasiveness and vastness of the life- sustaining energy of the universe which the word prana represents.

Arun Kumar & M.K.Muchha: have conducted study of effect of yogic practices on academic stress of secondary school students and on the components of academic stress. Viz. academic frustration, academic conflict, academic pressure and academic anxiety of secondary school students. Design of the study: it was an experimental study based on randomized matching. A pre test, post- text, control group design with one Experimental group was employed to conduct the present

experimental study. Treatment was the independent variable and dependent variable in academic stress. Training in yoga exercises Stakriyas (Kapalabhati and trataka), Pranayama (Anulom-viloma, Sitkari and Bhraman) and Meditation was given to the Experimental group for 30 days one hour in the morning regularly. Results: There is no significant difference in academic stress scores of students of Experimental and control groups at pre-test and post test levels was rejected in favor of the finding that yogic practices helped in reduction of academic stress from pre-test to post test level among students of the Experimental and control group. Entris made in table 2-t-ration for the mean reduced scores between the Experimental and control groups on academic stress was found to be significant at 0.01 level of confidence (t=9.905). Thus H2 was rejected as the Experimental group students, who were exposed to yogic practiced exhibited reduction in academic stress as compared to their counterparts of the control group. For each of the four components of academic stress, the t-ratios between the mean reduced scores of the experimental and control groups was found to be significant at 0.01 level of confidence. The t-ration between mean reduced scores of the two groups for academic frustration was 12.260, for academic conflict was 4.963, for academic pressure was 8.944 and for academic anxiety was 4.223. all these t-values were significant at 0.01 level of confidence. Thus H3, H4. H6 were rejected as yogic practices did help in the reduction of academic frustration, academic conflict, academic pressure, and academic anxiety among students of experimental group as compared to the control group students, who were not exposed to yogic practices. Conclusion: it is concluded that the study has revealed the efficiency of a carefully designed yoga module in reducing/coping the stress responses of adolescents of 10th standard in Moga district.

Abraham: have conducted a study on 48 girls of B.P.E 2nd and 3rd year students of LNIPE, Gwalior with a purpose to investigate the comparative effect of suryabheda. Kapalbhati and their combination on cardio-respiratory endurance and selected physiological variables. In order to study the comparative effects of suryabheda kapalabhati and their combination, analysis of covariance was applied at 0.05 level of significance. It was concluded that eight weeks of training in kapalabhati, suryabheda and their combination is not bringing any significant changes in the various cardio respiratory variables of experimental however, there was increase in mean value present in all experimental groups but were not statistically

significant.

Bhole and Karabelkar : studied the "Effect of yoga training on vital capacity and breath holding time:, measuring vital capacity in ml. and breath holding time in seconds respectively in 147 and 139 male respectively, between the age group of 18-50 years, before and after three weeks training programme in 20 Asanas, two breathing practices and 3 kriyas at nine yoga camp held during the year 1959-69, at average increase of 15 seconds in the breath holding time and 157 ml. in vital capacity were observed after training periods.

Bhowmik et.al conducted a study on "comparative effect of Chandra bedana and surya bedana on selected physical variables". The purpose of the study was to investigate the comparative effect of Chandra Bhedana and Surya Bhedana on selected physiological variables. For this study 30 male students from BPE IInd year were randomly selected as subjects from LNUPE, Gwalior. The subjects were divided into three groups.i.e two experimental groups and one control group. Among the experimental groups one group was administrated with Chandra Bhedana. Second group was given surya Bhedana Pranayama and control group did not participate in training programme. The quantities measurement period was eight weeks. The selected physiological variables were Resting Heart Rate, Vital capacity, Resting Rate, Maximum Breath Holding Time and Cardio-Vascular efficiency were administrated in the Human performance Laboratory of LNIPE, Gwalior. The random group design applied for the effect of Chandra Bhedana and Surya Bhedana Pranayama on physiological Variables.the analysis of covariance revealed that practice of Chandra bhedana and surya bhedana pranayama had different effect on vital capacity(F=12.964); positive Breath Holding Time (F+28.915); negative Breath Holding time (F=78.285); against required value of 3.37. However resting Heart rate (F=22.650). Resting respiratory rate (F=0.084) and cardio vascular efficiency (F=0.155) against require value of 3.37, showed no differential changes on the practice of Chandra Bhedana and Surya Bhedana pranayama subjects.

B.Suman and Dr.M.Sivasankar of yogic practices on resting pules rae among women college students. It was hypoticated that there would be significant difference among different packages of yogic practices on resting pulse rate among women college students. To achieve the purpose of the study 120 women students were

randomly selected from sri.Padmavati womens Junior college, Tirupati. Their age was ranged between 16 and 20 years. The women students were equally divided into three equal groups of 40 each as yoga package-I, yoga package-II and control group. The control group was not given any training. The experimental groups were undergone yogic practice for twelve weeks and six days in a week. The data were collected on selected dependant variable resting pulse rate, before and after training period. The collected data were statistically analyzed by using Analysis of covariance (ANCOVA) and Scheffe's post hoc test. To test the significance 0.05 level confidence was fixed. Based on the results of the study it was concluded that the second package of yogic practices were significantly improve the resting pulse rate than that of first package and control group. First package of yogic practices were significantly improve the resting pulse rate, than that of control group.

Bhanu Prakash Joshi has studied the impact of Kapalabhati, Vaman & Bhramari Pranayama on college going 40 male students (age group 18-25 yrs) of J.S Sanskrit Mahavidyalaya, Saptrishi Ashrama and Hardwar. It was concluded that a significant relationship between the practice of Kapalabhati, Vaman & physiological tests were measured in brahmavarchas research centre, shantikunj Hardwar.

Bhanu Prakash Joshi studied the impact of kapalabhati, vaman & bhramari Pranayama on college going 40 male students (age group 18-25 yrs) of J.S.Sanskrit Mahavidyalaya, saptrishi Ashrama and Hardwar. It was concluded that a significant relationship between the practice of kapalabhati, Vaman & Bhramari on hemoglobin, E.S.R, F.V., Physical & mental health. All the psychological &physiological tests were measured in Brahmavarchass research centre, Shantikunj Hardwar.

Biswajit Majumder, Dr H.R Nagendra, Dr. R Nagarathna: the present study was conducted children of both genders aged between 13-17 years were randomly allocated to three groups after startfying for age/sex. The groups are 1 (CV group) Creativity group (n=81), 2 (IQ group) intelligent quotient group (n=81) & (PS group) physical stamina group (n=79). All the groups prescribed specific yoga modules for 10 days. Associative memory was assessed by using Wechsler;s memory scale test. The assessments were taken day 1 & day 9th. The percentages of improvement in the three groups are as (CV-12.2%, IQ-11.4%, P.S-11.3%). The result showed significant improvement found in all groups with using paired sample't' test.

No significant difference found between the groups in ANCOVA test.

Dharmender conducted a study on 30 students from yoga match practice and yoga specialization group from Laxmibai national institute of physical education, Gwalior with a purpose to investigate the comparative effect of kapalbhati and anulom vilom on selected respiratory variables. In order to study comparative effect of kapalbhati and anulom vilom on selected respiratory variables, analysis of covariance was applied at significance level of 0.05. Further, to see the significance difference between group means and least significant difference post hoc test significance was applied. It was concluded that both treatment that is kapalabhati kriya and anulom Vilom pranayama have significant effect on all the selected physiological variables. Kapalabhati kriya practice has significant contributing changesover the resting resoiratory and air flow rate anulom vilom pranayama practice have significant changes over the vital capacity, negative breath holding time and positive breath holding time.

Dr. M. Jayachitra. Yoga breathing is considered as an intermediary between the mind and body which owes great potentials and comprehensive utilization of the prana system. As the pranayama and bandhas have vital role in the yogic breathing practices, the investigator analyzed the effect of pranayama and Bandha practices on selected physiological variable among adolescence girls. To achieve this purpose, three groupps of twenty adolescent girls each were randomly selected as subjects and named as 'bandha group' (BG) 'Pranayama group (PG) and 'combined group' (CG). BG and PG underwent selected bandha and pranayama practice respectively where as CG undertaken the combination of both pranayama and bandha practice for six weeks. The selected subjects were tested before (pre test) and after (post test) the practice period on the selected variables for the research work and were statistically treated by applying (ANCOVA) and scheffe's post Hoc test. The result of this study was proved that selected bandha and pranayama girls. Daily practice of yoga is one of the prime and easiest ways to maintain the physiological functions attain physical fitness and free from diseases especially among adolescent girls.

Dr.U.S.Tripathi & Dr. Rajeev Choudhary: a study was conducted on selected physiological variables (phy.var) on 60 subjects (fifteen from each group) with the purpose to determine the effect of physical education, yogic and combination of both

physical education and yoga programmes on selected physiological variables on mentally retarded students. The variables selected for the study were systolic blood pressure (SBP), diastolic blood pressure (DBP), pulse pressure (pp), and resting heart rate (RHR) and maximum breath holding time (MBHT). In order to study the comparative effect of physical education, yoga and combination of both physical education and yoga programme on selected physiological variables, the analysis of co -variance was applied at 0.05 level of significance. To find out the difference between the adjusted means (AM) for four groups, critical differences (CD) for adjusted final means was applied to find out which of the differences between the paired adjusted final means were not significant. On the basis of the results, the following conclusions were drawn: in case of SBP (1.42), DBP(0.14), PP (0.08) and MBHC (0021), the experimental treatments proved to be superior to the control group and sequence of the training effect of the experimental groups was physical education>yoga>physical education and yoga. India being the second most popular country in the world, finds proportion of mentally handicapped persons in the country alarming. According to several sample surveys, over three percent of the children between 6 to 16 years of age were found retarded. As in deep studies of appropriate exercises where the children learn to feel his body parts, muscles have to be developed. Free pile, crawling, rolling, pushing against the resistance and yogic practices as Asana, Bandha, Mudra, Pranayama are the basic practices to be encouraged in these children.

Dr. H.R.Nagendra ph.D Dr.R.Nagarathna, M.D. F.R.H.C. this study was undertaken to assess the individual effect of three selected modules of integrated yoga practices on the IQ level of school children and to compare the effect of three different yoga modules. 153 school children, aged 13-15 years (mean age SD, 13.86 0.84) were selected and randomly divided into 3 groups; Intelligence quotient (IQ) N=51; creativity N=52 and physical Stamina N=50. The groups were matched for sex, age, socio-economic status and socio environmental background. Each group was assigned a different integrated set of yoga practices including breathing exercises, pranayama (breath control), stithilikarana vyayama (loosenng exercises), suryanamaskar (sun salution), Yoga asanas (physical postures) and meditation. Each set of practices was designed to study its effect on 3 different variables. i.e. Intelligence quotient (IQ), creativity (CR) and physical Stamina (PS). The IQ level of each group was measured using the 'Draw-a-man-test' (standardized for Indian

children) before (on the 1st day) and after (9th day) of yoga training. In the group that was assigned the IQ set of Yoga practices, there was a significant change in the IQ level at 6.52% ($p<0.001$). There was no significant change in the creativity group at 2.08% ($p=0.67$) nor in the physical stamina group at 0.56% ($p=0.650$). Results from a gender analysis showed that there was no significant difference between boys and girls in any group. ($P=0.568$) these results suggest that a selected module of integrated yoga practices is effective in improving the IQ level of school children.

Dr.Umesh. C. Muktamath, Vinutha U. Mukthamath the purpose of the present study is to find out the effect of Asana, pranayama and meditation practice on resting pulse rate. To achieve this purpose of the study, forty students studying in Lions High school, Sirsi, Karnatakawere randomly selected as subjects. The age of the subjects were ranged between 15-17 years. The selected subjects were divided in to four equal groups of ten subjects each. Group I underwent Asana practice, group II underwent pranayama practice, group IIIunderwet meditation practice for five days per week for eight weeks of training period and group IV acted as control that did not participate in any special training programme apart from their regular activities. The data was collected at prior to and after the training programme of eight weeks. Resting pulse rate was chosen as a criterion variable. The analysis of covariance (ANCOVA) was used to analyze the data. The results of the study revealed that the resting pulse rate was significantly improved due to the Asana, Pranayama and meditation practice.

Gopal et.al studied the effect of Yogasana and Pranayama on blood pressure, pulse rate and some respiratory function two groups of male volunteers, 20-33 years in age and having the same experimental group consisted of 4 subjects in Yogasanas and pranayamas for a period of six weeks. The group consisted of fourteen normal untrained subjects, who carried out non-yogic exercise that is, long walk and playing light games. Pre-test and post-test were conducted to boyh the groups before and after training. The resultsof both groups were compared. The trained persons had greater vital capacity, more tidal volume and less respiratory rate than the untrained group. The prescribed standard exercise increased the respiratory rate in both the groups who instead exhibited a corresponding increase in total volume.

Gore and Gharote: conducted a study on "immediate effect of one minute Kapalbhati on respiratory function" where respiratory rate, minute Ventilation and oxygen consumption where significantly increased, while tidal volume was significantly decreased during the practice of kapalabhati for one minute twelve police cadets. Immediately after Kapalabhati the oxygen consumtion was reduce it was less than the resting value before kapalabhati practice.

Gore: conducted a study on "Effect of Kapalbhation some of the body functions ". Kapalabhati involves forced but rapid, voluntary abdominal breathimg. Effect of kapalabhati on some of the body functions was studied with the help of channel polygraph system. 30 observation where made on 10 healthy and trained subjects. During Kapalabhati the heart rate increased by 15 beats/min. the eye movement were found increased by Kapalabhati even if the eyes were closed. The alpha activity from the the parieto-occipoital one a showed a marginal decrease in 57% observations indication a mind quieting effect on the brain. Peripheral blood circulation as measured by way of finger plethysmography was also found decreased. This reduction persisted upto 35 to 45 seconds after Kapalabhati rate of respiratory also decreased by 3-5 breath/min. immediately after Kapalbhati.

Gopal et.al studied the effect of yogasanas and pranayamas on blood pressure, pulse rate and some respiratory function. Two groups of male volunteers, 20-33 years in age and having the same experimental group consisted of 14 subjects in yogasanas and pranayamas for a period of six weeks. The group consisted of fourteen normal untrained subjects, who carried out non-yogic exercise- that is long walk and playing light games. Pre-test and post test were conducted to both the groups before and after training. The results of both groups were compared. The trained persons had greater vital capacity, more tidal volume and less respiratory rate than the untrained group. The prescribed standard exercise increased the respiratory rate in both the groups who instead exhibit a corresponding increase in total volume.

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and it was less than the resting value before kapalabhati practice.

Ganguly and Gharote: conducted a study on "Effect of Yogic Training on Cardiovascular Efficiency on average man" this involving 11 clinically normal males of average age 26 years. The subjects were measured before and after 8 months of yoga training, which consisted for one hour yoga practice daily including Asanas, Kiyas (cleaning practises), Preanayamas, Bandhas (locks), mudras (seals) and meditation. There was found to be an average increase of 7.6 in the test score, from 78.6 to 86.2 this was a statistically significant change (0.05). One of the 5 subjects initially scoring in the high average category (65-79) remained in that category, while 3 moved to the good category (80-89) and I to the excellent (90 and above) category, while 3 moved to the good category (80-89) and I to the excellent (65-79) remained in that category, while 3 moved to the good category (80-89) and 1 to the excellent (90 and above)category remained in that category after testing, while 2 moved to the excellent category. The subjects were then randomly divided into two groups; group I skipped rope 1o minutes daily for 6 weeks and group II jogged 30 minutes daily for 6 weeks. Upon completion of the conditioning programmes the subjects again were administrated the Harvard step test and comparison were made from the pre exercise and post exercise data. The conclusions of this study were that a daily 10 minute programme of rope will significantly improve (p=0.05) cardiovascular efficiency as measured by the Harvard step test and that a minutes daily programme of rope skipping is as efficient as a particular 30 minutes daily programme of jogging for improving cardiovascular efficiency as measured by the Harvard step test. As a part of this study, a sub maximal test consisting of stepping on to an 18 inch bench at the rate of 24 steps/minute for three minutes was administrated to 2696 males and 2568 females, aged 10-69. The ECG, from which heart rate (HR) was measured, was recorded before, during and after the exercise, resting exercise and post exercise HR's are significantly higher for females at all ages, pre exercise HR decreases from age 10 -25 age in males and females and shows little age change thereafter. In both males and females the terminal (3 minutes) HR decreases from age 10-35 remains fairly constant to age 55, and decreases thereafter. The post exercise HR decreases again at age 65 in males and females. Reclining pre exercise HR is moderately correlated with the exercise and post exercise HR at all ages in males and females. However, there is only a low correlation between either sitting or standing anticipatory HR and exercise and

post exercise HR's. The HR sat 2.30 and during exercise are highly correlated as are the various post exercise HR;s with each other at all ages and in both males and females. The correlation of the exercise HR and post exercise HR is moderately high.

Karambelkar et.al: conducted a study on "Some Respiratory studies on Respect of Kapalabhati and voluntary Hyperventillation", even though breathing rate is very high during Kapalabhati (120/min) in comparison to voluntary hyperventilation (26/min); the minute ventilation in the later was found to be twice (31lit/min) and the tidal volume was almost ten times than in kapalabhati. However oxygen consumption was around 1.5 times more while co2 output was more by 3.5 times and breath – holding time was about twice more in hyperventilation.

Karembalkar and Bhole: conducted a study on :respiratory study during Kapalabhati for 1,2,3 and 5 minutes", where comparision of kapalabhati technique perform for 1st and 2nd minute by seven well trained subjects revealed the following in the former conditions, the rate of breathing was 123/minutes. While it reduces to 118, minutes in the later condition. On the other hand minute ventilation, oxygen consumption and carbon di oxide production showed an increase in the later conditions indicating more exertion from yogic point of Kapalabhati of longer duration may not be recommendable. However, one may thing of performing Kapalabhati for longer period for improving physical capacity.

Karuna Murthy S, Nagarathna R: this study was conducted to compare the three different specific integrated Yoga Modules on Verbal Memory in 500 school students whose age ranged from 9-12 years. After stratifying for sex and age (boys=181, girls=129), 130 school students were randomly allotted to three groups. All the three groups were trained in specific yoga modules designed for improving Physical stamina (PS=100), creativity (CR=107) and analytical intelligence (IQ=103), for ten days in a residential set up in south India. Verbal Memory was assessed using modified Wechsler's Memory scale Test on day first and after ninth day. There was significant improvement (student paired't' test p=0.001) in verbal memory in all three groups (PS=17.01%, CR=15.61% and IQ=15.05%). Results showed that the boys in the PS group (17.43%) had the maximum improvement compared to girls (3.94%).

Nandi and adhikeri: conducted a study on the effect of selected yogic practices on cardio-respiratory endurance of school boys. The present study was undertaken on 20 male students of Rajagram S.B Raha Institution, bankura. Cardio-respiratory endurance was measured using cooper's 12 minute run/walk test. During the experimental period the subjects were given yogic exercises for a period of eight weeks. The final test was conducted after eight weeks. The data showed a significant improvement in the fitness test as a result of yogic practices.

Oak and Bhole in their experiment on the pulse rate during and after bhaya kumbaka with difference conditions of abdominal wall. The effect of pranayama on pulse rate, found that very slight decrease in pulse rate, was observed during three attempts of Bahya Kumbhaka with relaxed and sucked in condition as udiyana while it was found to increase slightly in the protracted condition of the abdominal wall. It almost remained unchanged during the first minutes after three cycle of pranayamic breathing.

Pushpavathi.P.R Nagarathna R, Nagendra H R: No study has been done in this field using yoga as intervention. Verbal memory is one of the facets of personality and the purpose of all education is a healthy development of all aspects of the individual. Therefore these types of studies are required to establish the usefulness of yoga to improve total growth of personality in school children. The present study was conducted to compare the effect of three different integrated yoga modules on verbal memory in 300 school students of both genders, aged between 13 to 16 years. After stratifying age and sex subjects were randomly allocated to three groups which were assigned to IQ-specific yoga module (IQ), creativity-specific yoga module (CV) or physical stamina-specific yoga module (PS). All the groups practiced their on specific yoga modules for 10 days. Verbal memory was assessed using a paper pencil test of Wechler's scale test (1950). The subjects were evaluated showed significant improvement (paired't' test p=0.001) physical stamina group showed better performance compared to other two groups. To compare the effect of various yoga practices between groups post-training data were subjected to one way ANCOVA, followed by post hoc analysis by tukey test. Results show significant difference cv (8.84%) and PS(17.59%) groups at p=0.05. the percentage change based on gender between groups showed that PS group shown more significance specially the PSF

when compared to other groups. (IQM=9.05% IQF=13.63%.CVM=12.12%, CVF=1,31%, PSM=1 6.35%, PSF=19.69%).. Sigmund Freud claimed that we forget anything which causes us pain and anxiety. The studies done either showed the anxiety reducing effects of Yoga practice may the children to do better performance (12). Earlier study done showed that the effect of particular nostril breathing on the spatial memory (84%) & verbal memory (20 t 30% scores).

Singh conducted a study on 30 male students of kiddys corner school, Gwalior with a purpose to determine the effects of suryabhedan pranayama, on selected physiologicalvariables. In order to study the effect of suryabhedan pranayama on selected physiological variables, the analysis of covariance statistical technique was employed to analyze the data and 0.05 level of significance was chosen to test the hypothesis. It was concluded that among selected physiological variables only maximum breathing holding capacity exhibited significance. Physiological variables such as resting pulse rate. Vital capacity, resting respiratory rate and cardiovascular efficiency did not show the significant changes.

Sharma: conducted studies on physiological variables on inter –college level judokas with a purpose to find out the effect of Bhastrika Pranayama on cardio-respiratory Endurance. The variable selected for the study were vital capacity, peak flow rate, maximaum breath holding time (positive and negative) and resting pulse rate. In order to study the effect of Bhastrika Pranayama on cardio –respiratory endurance's' test was used. On the basis of results, following conclusions were drawn.

(a) Bhastrika Pranayama practice has significantly contributed to cardio- respiratory functions, mainly pulmonary rate, and vital capacity, breath holding time, and peak flow rate and cardio vascular efficiency. On the basis of the study, it may also be concluded that bhastrika pranayama could be used for training judokas for improving cardio-respiratory efficiency.

Seshien conducted a study on the effect of pranayama and transcendental meditation on the pulse rate and blood pressure of the male students of the Sourastra College, mudurai. For this purpose 75 college students were randomly assigned to one of the three groups. The first group performed pranayama the second group performed

transcendental meditation and the third group performed pranayama and transcendental meditation. Subjects in each group were trained with respective programmers for a period of six weeks, five days a week from Monday to Friday and two sessions of 20 minutes duration both in the morning and in the evening. Prior to and at the end of the training period all the subjects were t tested for pulse rate and blood pressure. The result showed that the pranayama reduced the blood pressure. Transcendental meditation has a positive effect on systolic blood pressure only combined pranayama and transcendental meditation showed very good effect on all the physiological parameters.

S.K.Ghosh: sixty subjects, age ranged from 13-15 tears were randomly divided into four groups of equal number: physical exercise group. Yogic practices group, combined group and a control group. The experimental groups underwent twelve weeks treatments programme. Both pre-test and post test were made for the collection of data. The data collection was made on the selected physiological variables, namely, pulse rate, respiratory rate, breath-holding time and mean arterial pressure. The results of Analysis of covariance (ANCOVA) followed by the Schiff's test showed significant decrease in all the groups except control group. Between combined group and yoga group, physical exercise group and yoga group- a significant deference in paired adjusted final mean is seen. But there was no significant difference in pulse rate in combined group when compared with the physical exercise group. Physical exercises and yogic practices are essential in promoting a balanced physical and mental state in human being. This is because of the various physiological systems in our body such as nervous system, circulatory system; glandular system, muscular system etc. become slowly conditioned to maintain harmony with each other by these practices which ultimately lead to the stability of the body and mind. An attempt is made in this study to have a searching inquiry by away of comparing the effects of physical exercise, yogic practice independently and also combined on selected physiological variables in case of high school boys. Further it was aimed to find out which of the experimental factors of yoga and a fitness plan on selected physiological parameters. The result after practice of yoga and a fitness plan on selected physiological parameters. The result after practice of yoga indicated an increase in vital capacity, chest expansion, breath holding time and body flexibility; but there was a decrease of the heart rate.

Chinnaswamy (1992) observed that hemoglobin content and blood sugar level were improved significantly with the effect of asana and physical exercises, where as the pulse rate and diastolic pressure had been lowered in resting condition. However, there was no significant change in systolic pressure. Chocking (1963) found that pulse rate and respiratory rate were decreased significantly after the training period regardless of the training programmes prescribed. Udupa et.al (1971) selected twelve subjects and imparted yoga practices for a period of three months, and found that thepulse rate decreased significantly. Krishnan (1971) observed that due to selected Bharathiyam exercises and yogic practices pulse rate was decreased significantly and breath holding time, cardiovascular efficiency and vital capacity improved significantly.

Shatrughan S. Nagendra HR & Nagarathna: the present study assessed the visual memory in school children following general yoga practice. Children (n=270 whose ages ranged from 13-17 years) were randomly assigned into 3 groups. Each group practiced a specific yoga technique (physical stamina= Dynamic practices, creativity=artwork, crafts, skits, IQ= special quiz, debate.) these techniques were practiced and visual memory was assessed initially and after 9 days. There were 277 children who were got after dropouts and checking for abnormal data and that were taken for assessment. All 3 groups showed significant increase in visual memory ($p<0.001$, paired sample t-test) but physical stamina showed a higher increase (27.73% change) than other two groups. The left or right dominant yoga modules have influenced the visual memory more than physical and balancing effects of yoga modules.

Sujatha K J: the present study was conducted to have a comprehensive view of the concepts of two basic purificatory processes in yoga and Ayurveda. Purificatory processes are mentioned in Vedas. The purification through Sat karmas which is also commonly known as Sat kriyas is mentioned first in Hatha yoga pradipika. The sat karmas, the six cleansing techniques are named as dhauti, Basti, Neti, Trataka, Nauli and Kapalabhati. Caraka, the Ayurveda Acarya, mentions the practice of different limbs of yoga for the prevention and cure of the diseases and maintenance of health along with other procedures of the Ayurveda. The Ayurveda texts describe the five purificatory processes called Pancha karmas. They are Vaman, Virecana, vasti,

NAsya and Rakta moknana. Both the sat karmas and panca karmas, the hodhana type of treatments, are based on same concepts of improving the health Each of the sat karmas can be compared with the panca karmas either by the similarities with their procedure or by the similar effect over the body. For example Basti with Vasti, Neti with Nasya, Vamana dhauti with Vamana karma, Varisara (shankha praknalana) with Virecana is compared with one another for the same reason. Variatitions in practice also have similarities. For example Karnadhauti and oiling of ears, jihva mula dhauti and oral gargling. Danta mula and danta praknalana, danna dhauti and oral hygiene through gargling. Thus in this study, an effort is made to explore the similarities between the sat karmas and panca karmas relating to their basic concepts and therapeutic effects. A combined approach of using herbs in various sat karmas is also listed with few commonly used herbs. Further research can be done on beneficial effects of use of herbs in Sat karmas.

Thakur: studied to see the effect of kapalbhati on cardio-respiratory variables. He found that there was significance increases in vital capacity (f=26.82 against required value of 4.08) resting pulse rate (f=45.23 against required value of 4.08). Whereas blood pressure and air flow rate showed significant change by practice of kapalabhati kriya.

Vishwajeet Singh Dr. R Nagaratna. DR. H.R. Nagendra. The present study was aimed to assess the intelligence quotient (IQ) in children's after intensive practice of Integrated Approach of Yoga and to Compare the effects of three different yoga modules through Draw-a- man test. Subjects included normal healthy English-medium school children (n=207) aged between 9-12 years (mean= SD, 10.86+0.91). They were randomly assigned to three groups, srsti i.e for Creativity Development (B) Srsti i.e for IQ Development (A), and Laya i.e for Physical Stamina Development (C). They were taught three different yoga modules of Asana (yoga postures), pranayama (breathing exercises), kriya (cleansing techniques), meditation, games and lecture by trained instructors. But daily time schedule for all the here groups remained the same. Draw-a-man test was administrated to children in all three groups on the first and ninth days of a residential program. Paired 't'test was used to compare the change in IQ scores in the three groups. Results showed that there was significant improvement ($p<0.001$) in the A group. The improvement in the A group was 3.91%, 0.44% in the

B group, and 0.10% in the C group. Analysis between the three groups was done by means of one-way ANCOVA, followed by post hoc multiple comparison (Tukey test), which showed that the group, which participated A-specific yoga module, showed significant improvement, compared to B and C groups.

Wanger and Bagchi; measured finger temperature and finger pulse volume before and after Kapalabhati, ujjayi and Bhastrika Pranayama and reported that:

- Average finger temperature decreases in Ujjayi and bhastrikaonly.
- It showed increases in Kapalabhati
- The heart rate showed elevation of two beats per minute during Bhastrika and 4 beats during Kapalabhati.
- In non yogic hyperventilation, the elevation was much greater, amounting to increase of 28-32 beats per minute.
- In the same subjects systolic blood pressure increased by 6 mm of hg. During Bhastrika and 12 mm of hg. During Kapalabhati and decreased slightly during Ujjayi.

CHAPTER-III

METHODOLOGY

The procedure adopted in this research is related to the selection of subjects, selection of variables, experimental designes, Selection of tests and before the administration of the test the researcher was gaven orientation of the test.

Selection of Subjects

For the purpose of gathering the data 120 Women were selected between age group from 19 to 23 years studying in Smt. Bangaramma Sajjan Arts and Commerce College for Women, of Vijayapura District of Karnataka state.

Selection of variables

The researcher reviewed the available scientific literature and discussed with experts pertaining to cognitive and physiological variables from various journals and books. The investigator has considered the criteria of feasibility, availability of the instrument and the relevance of variables to the present study. The following variables were selected as;

Independent Variables

Asanas

- Padmasana
- Vajrasana
- Vakrasana
- Tadasana
- Vrikshasana
- Savasana
- Naukasana
- Halasana
- Makarasana
- Bhujangasana
- Dhanurasana

Pranayama

- Anulomviloma
- Sheetali
- Shetkari

Kriyas

- Jalaneeti
- Trataka
- Kapalbhati

Dependent Variables

Cognitive Variables

- Long Term Memory
- Intelligence

Physiological Variables

- Resting Pulse Rate
- Maximum Oxygen Consumption (VO2 max)

Experimental Group I Asanas training Programme

SI No.	Asanas	Time allotted
	Warm up	**07 Minutes**
01	Padmasana	**Asanas Practice 45 Minutes**
02	Vajrasana	
03	Vakrasana	
04	Tadasana	
05	Vrikshasana	
06	Savasana	
07	Naukasana	
08	Halasana	
09	Makarasana	
10	Bhujangasana	
11	Dhanurasana	
	Relaxation	**08 Minutes**
	Total	**60 Minutes**

Experimental Group II Pranayama training Programme

Sl.No	Pranayamas	Time allotted
	Warm up	**06 minutes**
01	AnulomViloma Pranayama	12 minutes
02	Sheetali Pranayama	12 minutes
03	Sheetkari Pranayama	12 minutes

04	Bhramari Pranayama	12 minutes
	Relaxation	**06 minutes**
	Total	**60 minutes**

Experimental Group III Kriyas training Programme

Sl.No	Pranayamas	Time allotted
	Warm up	**07 minutes**
01	Jal Neeti	15 minutes
02	Kapalbhati	15 minutes
03	Trataka	15 minutes
	Relaxation	**08 minutes**
	Total	**60 minutes**

To give systematic training for asanas, Pranayama and Kriyas Experimental group for trained individuals were selected to look after the training schedule regularly as per the planned training programme.

Experimental Design

The selected subjects (N=120) were divided into four equal groups as Asana group I pranayama, group II Kriyas group III and control group IV. Group I underwent Asana training, group II underwent pranayama training group III underwent Kriyas, the training for was given weekly 6 days for 60 minutes. Group IV control group did not undergo any kind of training.

Selection of tests

The pre-test and post-test were conducted on the selected dependent variables administering standardised test. The criterion variables are presented in the table.

SI. NO	Variables	Test items and Tools	Unit of Measurement

1	Long term Memory	Questionnaire developed by Dr. B.B.Asthana	By using card related to questionnaire and the subject's responses within two minute recorded.
2.	Intelligence	Questionnaire developed Dr. P.N Mehrotra	Cognitive development of the subject as per questionnaire.
3	Resting Pulse Rate	Radial Pulse rate	Place index and middle fingers together on the opposite wrist, about ½ inches on the inside of the joint, in line with the index finger once pulse is located count the number of beats felt within a one minute period and recorded.
4	VO2 max	Cooper test 12 minutes Run and walk 400 meter running track, marker, cones and stop watch.	Distance covered by subject against time taken.

Orientation of Subjects

The investigator conducted an orientation with the subjects prior to the administration of test. The purpose, the significance of the study and the requirements of the testing procedure were explained to them in detail so that there was no ambiguity in their minds. All the subjects agreed to extend their fullest co-operation during test administration. The subjects were enthusiastic and co-operative throughout the study.

Pilot Study

The researcher wanted to find out the effect of Asanas, Pranayama and Kriyas on cognitive and physiological variables of women. For the purpose of pilot study, the researcher selected 20 subjects for the study. Pre-test was administred and recorded.

Then the researcher was given one month training on selected Asanas, Pranayama and Kriyas. The post-test was administrated soon after the one month training. The researcher compared the pre-test and post test results. According the training load was fixed to 60 minutes.

Collection of Data

The data was gathered by conducting pre and post test by using questionnaire for Long term memory and Intelligence were measured. Resting Pulse Rate, (Radial Pulse Rate) maximum oxygen consumption (VO2 max), and 12 minutes run and walk test were taken.

Administration of the training

Asanas

Padmasana

Plate-I Subject Performing the Padmasana

Procedures

- Sit on the floor and stretch your legs. Your legs should be straight in front. Hold the right leg in both your hands, fold the legs slowly, and place it on your left thigh. Ensure that your feet touch your navel.
- Like earlier, fold the left knee, and hold it with both hands and place it on the right thigh close to the other. At this point, both knees should touch the floor and the foot should face upwardly.
- Your spinal cord should be straight at this point. If you feel some difficulty while sitting in this posture for a long time then you can change your legs and then sit in the same position.Your spinal cord should be erect, your both hands should be together or put the palms facing upside on the knee joints and the thumb must touch your index finger and the other fingers should come upward.
- The breathing process should be done slowly and deeply. (Inhale and exhale) and focus should be on your breathing. Do this asana for 2-3 minutes in the beginning stage. Once you are used to it, then increase the time by 15-30 minutes. Remember

one very important thing: don’t bend your body or head while doing this asana.

Benefits of Padmasana

- Padmasana is the most commonly used asana by beginning yoga practitioners to improve their mental focus and concentration. It helps in improving the conceptual power and it will calm the brain also.
- This asana helps to preserve vital fluids in the body and prevents abdominal disease and female disorders connected with the reproductive organs.
- Doing this asana gives your mind peace, solitude, and longevity. It increases the appetite and also helps to relax the body.
- It also helps to stretch the ankles and knees. This asana is the foundation for all other asanas, and it strengthens the female hip and knee joints and provides a painless and peaceful mind.
- They can reduce the unwanted fat from your hips and thighs. This is the simplest and easiest asana which can be done by all age group people and they are benefited out of it.

Vajrasana

Plate-II Subject Performing the Vajrasana

Procedures

- Sit on the flat floor in Dandasana or fold your legs and place your feet under your hips. (Both heels are protruding outwards, and the toes are touching your hips; the thumbs of both toes should be touching in this position.)
- Keep your spine and head straight with closed eyes.
- Your knees should touchg each other.
- Place a right hand on the right knee and a left hand on the left knee.
- After that, inhale and exhale slowly through both nostrils. (Normal breathing).
- When you breathe out, try to assume that all your disorders are coming out of your nostrils.
- In the beginning, try to practise Vajrasana for 5 minutes after lunch or dinner. Once you are used to it, it increases the time asana by about 30 minutes to 60 minutes.

Benefits of Vajrasana

- It is the best asana for meditation and concentration.
- Helps in keeping the mind stable and calm.

- It cures indigestion, acidity, gas formation, and constipation and increases the digestion process.
- Those people who are suffering from gas problems can practise immediately after lunch or dinner.
- Reduce back pain.
- It is very beneficial for stomach disorders.
- Beneficial for urinary problems.
- Strengthens the sexual organs.
- Helps to reduce obesity.
- Gives strength to the thigh muscles.
- Useful for arthritis patients.
- Relieves pain in the knees.

Vakrasana

Plate-III Subject Performing the Vakrasana

Procedures

- Sit down and stretch your legs forward on the ground.
- Keep your hands beside your thighs or buttocks.
- Bend your right leg straight and stretch it.
- Keep the left foot beside the right knee and raise the left knee upward.
- Inhale and raise the arms shoulder high and keep the elbows straight.
- While Exhaling, twist to the left, place the right arm by the outer side of the left and hold the left ankle with the right hand.
- Take the left hand behind the back and keep the palm on the floor.
- Look backward from the left side.
- Hold on to the position.
- The final position of each stage should be held while breathing naturally. Hold the position as long as you are comfortable.
- Then inhale and raise the right arm shoulder high and keep the elbows straight.
- While exhaling, release the left twist; place the right hand by the side of the right buttock and the left hand by the side of the left buttock.
- Take a deep breath and relax.

- Repeat the same from the other side.
- Practice it from both sides.

Benefits of Vakrasana

- Increases the elasticity of the spine and tones the spinal nerves.
- Stretches the muscles.
- Helps to get relief from the stiffness of the vertebrae.
- Massages the abdominal organs.
- Reduces belly fat.
- Regulates the secretion of digestive juices for different digestive disorders.
- It loosens the hip joints and reliev stiffness.
- Flab on the lateral side of the abdomen gets reduced.
- It especially stimulates the Navel chakra or Manipur chakra.
- Kundalini Shakti is sublimated.
- The benefits are similar to Ardhamatsyendrasana.

Tadasana

Plate-IV Subject Performing the Tadasana

Procedures

- Stand straight and create a small gap between your feet.
- With deep breathing (inhale), raise your arms.
- Keep your arms raised by interlocking your fingers.
- Now come on the toes by raising your heels simultaneously.
- Feel the pressure or stretch from toes to fingers.
- Try to return to the original position with deep breathing (exhale).
- After relaxing for a while, you can perform as many rounds as you like.

Benefits of Tadasana

- Due to deep breathing, it provides strength and expansion to the lungs.

- This is the best exercise to increase your height.
- It develops and activates the nerves of the entire body.
- It gives strength to the vertebral column and heart.
- It is also good for regulating the menstrual cycle in women.
- It cures the problems related to indigestion.
- It gives strength to your arms and legs.
- It helps to remove lethargy from the body.
- It reduces the problem of flat feet.

Vrikshasana

Plate-V Subject Performing the Vrikshasana

Procedures

- To begin, stand properly and straight with your feet together and your knees completely straight.
- Maintain your arms at your sides.
- Lift your right foot and hold the lower leg (ankle) in your right hand without twisting your left knee.
- Now fold your right leg at the knee joint.
- Using both hands put the right heel on the left thigh as high as you could expect under the circumstances. Your toes should turn towards downwords.
- Your right heel ought to press onto the thigh.

- Now try to balance yourself on your left leg.
- After that, join your palms and fingers and place them on the side of your left leg.
- At that point, your fingers should be pointing upwards, as in Namaskar or petition to God pose.
- Now breathe in and lift your hands gradually over your head.
- Try to stretch yourself and stand straight while keeping your balance.
- Look straight ahead and keep up this posture by breathing normally (hold the position as long as you can.)
- Breathe out and bring your hands down to your chest.
- Come back to the initial position.
- Repeat the pose with your other leg.

Benefits of Vrikshasana

- It strenghtnes the spine.
- It strengthens the tendons and ligaments of the feet.
- It tones up the leg muscles.
- It strengthens the knee.
- It creates flexibility in the hip joints.
- It strengthens the inner ears, eyes, and shoulders.
- It is beneficial for sciatica and flat feet problems
- It gives calmness to the mind and makes your body steady as well as flexible.
- It improves your concentration and mental abilities.
- It is best for problems related to postural problems.

Savasana

Plate-VI Subject Performing the Savasana

Procedures

- First, lie down straight on your back on the floor. Put or maintain a distance of 1 foot in between your legs. Keep your hands open, with palms facing upwards, some distance away from your thighs.
- Now slowly close your eyes keep your neck straight and relax your whole body.
- After that, slowly take deep breath for about 5 to 6 times. At this time, visualise each and every part of your body in your mind with resolution and the feeling that each and every organ in your body is relaxed and free from all stress.
- After that, you need to give complete rest to your body. For this, you also have to be determined to relax and rest your body. With your closed eyes and with a determined mind, assume that the thumbs and fingers of your feet are totally light (weightless) and relaxed.
- After that, think about your ankles and feel their relaxation. Then visualise your calf muscles and assume that your muscles are completely healthy and stress-free, in a state of complete rest. Feel the calmness spreading throughout your entire

body as a result of the joyful sensation of relaxation. As, you start crying by thinking about sadness and sorrows, and get happy with the thought of the funniest moments. In the same way, your body starts feeling total calmness or tranquilly with the mere thought of relaxation.

- After focusing on your calf muscles, concentrate on your knees and feel that they are tension free, stronger, healthy, and completely relaxed and at complete rest.
- Now, in your mind, focus on your upper body parts like your back, stomach, and your waist. Assuming them with comfort, feeling a state of rest, healthy and free from tension.
- With a calm and relaxed mind, focus on your heartbeat and try to listen to it. During listening to the symphony of your heart, assume that my heart is perfectly healthy; there are no disorders in my heart; it is completely free from stress and in a state of rest.
- Now it's time to focus on your shoulders and feel that they are totally relaxed and free from tension.
- After that, one by one, visualise your arms, elbows, wrists, fingers, and thumbs on both thumbs and feel them be in a state of stress and relaxation.
- After focusing on your whole body, take a rest for 5 to 6 minutes. Slowly raise your hands in the air and rub your palms for about 20 seconds. Put them on your eyes for 10 seconds.
- Fold your knees and turn to your right side, with your hands, press the ground and come to the normal sitting position.

Benefits of Savasana

- Shavasana is easy to do and is the best relaxation process for high blood pressure, heart diseases, stress, insomnia, and depression.
- the ability to concentrate and think it increases.
- Performing this after other asanas relieves the tiredness in your body in a very short time.
- Shavasana gives complete rest to the mind, body, brain, and soul.
- It calms all the body parts, including the mind and soul, and gives happiness.
- It cures weakness in the brain, negative thinking and tiredness.

Naukasana

Plate-VII Subject Performing the Naukasana

Procedures

- Lie on your back with your feet together and arms beside your body.
- Take a deep breath in and as you exhale, lift your chest and feet off the ground, stretching your arms towards your feet.
- Your eyes, fingers, and toes should be in a line.
- Feel the tension in your navel area as the abdominal muscles contract.
- Keep breathing deeply and easily while maintaining the pose.
- Hold the position for a few seconds.
- As you exhale, come back to the ground slowly and relax.
- Duration: 3-4 repetitions per day, but no more than that.

Benefits of Naukasana

- It strengthens the back and abdominal muscles.
- It tones the leg and arm muscles.
- It is useful for people with hernias.
- This yoga pose helps to remove belly fat.
- It improves digestion.
- It helps in developing six-pack ABS.
- It improves the circulation of blood.
- It strengthens your thigh, hips, shoulder and neck.
- It regulates the function of the kidney, thyroid, and prostrate glands.

Halasana

Plate-VIII Subject Performing the Halasana

Procedures

- Lie on the yoga mat or carpet and join the legs together.
- Raise your legs to make an angle of 90 degrees.
- Propel the palms; raise the waist and legs, bending forward, curving the back and resting the legs on the floor above the head.
- Try to place the big toe on the floor and keep the legs straight.
- Balance the whole weight on the shoulder blade, shift both the hands over the head, join the fingers and hold the head with it and relax the elbows on the floor.
- Try to remain in the position till the count of 100.
- Then release the fingers above the head, pressing the palms on the floor, taking back the thumb toe, gently bringing the body and legs to the floor.
- Relax and practise for 2 more rounds.

Benefits of Halasana

- Practicing this asana regularly can avoid diseases like diabetes, obesity, constipation, stomach disorders, blood pressure, and menstrual disorders.
- It makes your backbone elastic and flexible.
- Halasana helps to reduce both belly and body fat.

- It improves memory power.

Makarasana

Plate-IX Subject Performing the Makarasana

Procedures

- Lie down straight on your stomach.
- Now join your elbows, making a stand, and place your palms under your chin.
- Lift your chest up.
- Keep your elbows and legs together.
- While inhaling, first fold one leg at a time and then both legs together later.
- While folding, your ankles should touch your hips.
- While exhaling, your feet should be straight and your head should be steady.
- Repeat this for 20–25 times.

Benefits of Makarasana

- It is helpful for cervical, slipped disc, spondylitis, and sciatica.
- It is beneficial for all spine-related issues
- It is very beneficial for Asthama, knee pain, and other lung-related issues.

- It stretches the muscles of the legs and hips.
- This pose is best for relaxing after doing other asana.

Bhujangasana

Plate-X Subject Performing the Bhujangasana

Procedures

- Start by lying down on the floor on your stomach at a comfortable level, preferably on a yoga mat. Keep your feet together and keep your head against the floor.
- Now spread your hands on the floor under your shoulders and hug your elbows against your rib cage. After doing this, close your eyes. And take a slow, deep breath.Imagine the stability in your pelvis, thighs, and feet. Consider that part to be rooted to the ground.
- Exhale gradually before opening your eyes and continue the breathing process (inhale-exhale) slowly and deeply. As you inhale, your arm should be steadily straightened and this feels uncomfortable. Extend through and deepen your stretch to create a graceful arc in your back. Stretch your legs and back instead of exerting yourself to gain height and risking overarching your spine.
- Now press your tailbone towards your pubis and lift your pubis toward your navel, all the while trying to narrow your hips.

- Keep your shoulders broad but relaxed, with the blades low on your back. Now lift from the top of your sternum, but try to avoid pushing the front of your ribs forward. Puff your side ribs forward and keep your lower back relaxed, trying to feel the stretch evenly along your spine. In the process of going up and down, inhale when you're bent upwards and hold your breath for a few seconds, then exhale when you're bent down upward position, try to hold your breath for some seconds, and release your breath while getting back to the starting position or lying down position.

Benefits of Bhujangasana

- This asana helps to stretch muscles in the shoulders, chest, and abdomen also. It decreases stiffness in the lower back, and it strengthens the arms and shoulders.
- It increases flexibility and improves menstrual irregularities in women. This can also help with stress, depression, and anxiety by keeping them away from our minds. It firms and tones the butt area.
- It improves the blood circulation and oxygen in the body, especially in the heart and through the spinal and pelvic regions, and it stimulates organs in the abdomen, like the kidneys. It also opens the chest and helps to clear the passages of the heart and lungs.
- It improves digestion gives strength to the spinal cord. It helps soothe sciatica. It also aids in the treatment of asthma symptoms.

Dhanurasana

Plate-XI Subject Performing the Dhanurasana

Procedures

- Lie on your stomach.
- Hold your feet with your hands, making a back bend and positioning yourself like a bow.
- Pull your feet slowly, as much as you can.
- Look straight ahead with a smile on your face.
- Keep the pose stable while paying attention to your breath.
- After 1-20 seconds, as you exhale, gently bring your legs and chest to the ground and relax.

Benefits of Dhanurasana

- Dhanurasana strengthens the back and abdomen at the same time.
- It keeps you active and energetic.
- It helps improve stomach disorders.
- The bow pose also helps in reducing fat around the belly area.
- It is beneficial, especially to women, as it improves the reproductive system and helps improve menstrual disorders.
- It helps to regulate the pancreas and is recommended for diabetics.
- It expands the thoracic region of the chest.
- It helps alleviate hunchback.
- It increases the appetite.
- The bow pose combines the benefits of the cobra and the locust postures.
- Balancing the weight of the body on your abdomen also reduces abdominal fat and keeps the digestive and reproductive systems healthy.

Pranayama

Sheetali Pranayama

Plate-XII Subject Performing the Sheetali Pranayama

Procedures

- Sit on the ground in the position of Sukhasana or Padmasana.
- Now roll your tongue from both sides to make a tube shape.
- Now inhale deeply through this tongue tube.
- Close your mouth and hold your breath for a few seconds.
- Now exhale from the nostrils.
- Repeat this for 8–10 times.

Benefits of sitali Pranayama

- By inhaling through the rolled tongue, we keep our bodies cool.
- One of the best breathing exercises to calm your mind and body.

- It is an effective way to control your blood pressure.
- It improves the quality of sleep and cures insomnia.
- It is effective to calm down pitta in the body.
- It relieves stress and anxiety.
- Its plays an important role in the purification of blood.

Seetkari Pranayama

Plate-XIII Subject Performing the Sheetali Pranayama

Procedures

- Sit on the ground comfortably. (Sukhasana or Padmasana).
- Keep breathing normally for a few minutes and then relax.
- Now touch your upper and lower teeth together and touch your tongue upwards.
- Open your lips and start inhaling deeply, which produces a hissing sound.
- Hold your breath for a few seconds, and then exhale through the nose.
- Remember that the duration of exhalation should be twice that of inhalation.
- Again, inhale and exhale as per the above steps. Repeat this for 10-15 minutes.

Sitkari Pranayama

- It cools down your body.

- It lowers your high blood pressure.
- It reduces the excessive stomach heat.
- It reduces pitta dosha.
- It calms your mind and reduces stress.
- It reduces your anger and fatigue.
- It improves the health of teeth.

Anulom Vilom Pranayama

Plate-XIV Subject Performing the Anulom Vilom Pranayama

Procedures

- Sit on the chair or on the ground.
- Close your right nostril with your thumb and breathe in (inhale) from your left nostril.
- Now close your left nostril and breath out (exhale) from your right nostril.

- Now breathe in with your right nostril and exhale from your left nostril with your closed right nostril.
- Continue breathing like this for 5 minutes.
- When you inhale or breathe in, air should go into the lungs and not into the stomach.

Benefits of Anulom Vilom Pranayam

- Regular practise of Anulom Vilom pranayama reduces the risk of heart attack and cures heart problems. It removes artery blockages of the heart completely without medicine if you practise it regularly.
- It calms the mind.
- It releases stress, tension, anxiety, and depression.it is effective in curing asthma, headaches, migraines, and neurological disorders.
- It strengthens and tones the nervous system.
- It keeps diabetes under control.
- It enhances blood circulation
- It reduces your high blood pressure or hypertension.
- It purifies "nadis" in the body, so it is also called "Nadi Shuddhi" Pranayama.
- It balances your three doshas. Vata (air, wind), Pitta (Bile) and Kapha (phlegm).
- Regular practise of Anulom Vilom makes you healthy and strong.

Bhramari Pranayama

Plate-XV Subject Performing the Bhramari Pranayama

Procedures

- Sit in Padmasana or any other sitting asana.
- Close your eyes and breathe deeply.
- Now close your ear lids or flaps with your thumbs.

- Place your index finger just above your eyebrows and the rest of your fingers over your eyes with your middle fingers.
- Apply very gentle pressure to the sides of your nose.
- Now concentrate your mind on the area between your eyebrows.
- Keep your mouth closed; breathe out slowly through your nose, making a humming sound of Om.
- Repeat this process for 5 minutes. The important thing is that while doing this pranayama, assume that you are connected to all the positive energies of the universe.

Benefits of Bhramai Pranayama

- This is the best method to achieve concentration of mind.
- It opens the blockages and gives a feeling of happiness to the mind and brain.
- It is beneficial in relieving hypertension.
- It calms the mind and reduces stress.
- It helps with high blood pressure and heart problems.
- With the help of this, the mind becomes steady and lowers mental tension and agitation.
- It is helpful in curing paralysis and migraines.
- People of all age, can try this breathing exercise, including pregnant women.
- During pregnancy, it aids in the maintenance and regulation of the endocrine system and helps for a smooth childbirth.
- It is very good for Alzheimer's disease.
- The most effective pranayama for awakening the Kundalini

Kriyas

Jala Neti

Plate-XVI Subject Performing the Jala Neti

Procedures

- One should take 1 tablespoon of salt to 1 litre warm water. The water should be slightly warm so that it does not irritate the tissues inside the nostrils.

- Pour saltwater into the neti pot. It can be made of copper, steel, ceramic, plastic, or other materials.
- Place the spout of the pot into one nostril.
- Tilt your head gently, keeping the spout on the upper side. Open your mouth (breathing should be done through the mouth during the process). You will begin to pour water out of the empty nostril; you can adjust the tilt of the head until this happens. Continue till the water in the pot is over.
- Fill the pot again with saltwater and do the same on the other nostril.
- You can repeat this process any number of times. Depending on the situation

Benefits of Jala Neti

Neti helps to maintain nasal hygiene by removing dirt and bacteria that has trapped in the nostrils with the mucus. It removes dirt and bacteria trapped with the mucus in nostrils.

- It desensitises sensitive tissues inside the nose, which can cause rhinitis, asthma, or allergies.
- It can help alleviate health problems such as sinusitis, migraines, headaches, ear problems, and middle ear infections.
- Jala Neti can help with upper respiratory complaints, sore throats, tonsils, and dry coughs.
- It can clear the eye ducts and improve vision.
- Jala Neti also calms the mind and nervous system, which helps in relieving stress and giving clarity to the mind.
- It aids in the treatment of asthma and improves breathing quality.
- It can help with middle ear infections.
- By clearing the nasal passageways, it helps to improve digestion and the sense of smell.
- It deepens the quality of meditation.

Trataka

Plate-XVII Subject Performing the Trataka

Procedures

- Sit in a meditation pose in front of a candle. Place the candle about an arm's length away from you, with the wick of the candle at the same height as your chest. If the candle is placed too high, it can create tension at the eyebrow centre or produce a burning sensation in the eyes. The flame should be still and not moving in a draft. Close your eyes. Mentally repeat your mantra as in meditation.
- Open your eyes and look at the flame without blinking. The flame has three zones of colour. At the base of the wick is a reddish colour, in the middle it is bright white, and at the tip it is slightly smoky. Concentrate on the upper part of the flame where it is brightest.
- Close the eyes again. If the image of the flame appears within, gently concentrate on that image without creating any tension. Try not to pursue or hold onto the image, otherwise it will fade and disappear.
- Repeat the practise three times.
- The practise time should gradually be built. In the initial stage, look at the flame only for about 10-15 seconds. Slowly increase this time, so that after about one year you can look at the flame for 1 minute and then concentrate on the inner image with closed eyes for about 4 minutes. Under no circumstance, the length of time is extended.
- One may also practise Trataka while looking at a white point on black paper, or at a black point on white paper. When one concentrates on a white point, one sees this as a black image when the eyes are closed and vice versa with a black point.

Benefits

- It purifies the eyes, strengthens the eye muscles, and improves vision and memory.
- It helps with sleeping difficulties and bed wetting.
- It strengthens the ability to concentrate and is therefore recommended for school children.
- It develops intuition and the ability to visualise and will power.

Kapalabhati

Plate-XVIII Subject Performing the Kapalabhati

Procedures

- First, sit in Padamasana, close your eyes, and keep the spine straight.
- Now take a deep breath (inhale deeply) through your two nostrils until your lungs are full of air.
- Now exhale forcefully through both nostrils, so your stomach will go deep inside. As you exhale, you should feel some pressure in your stomach.

- At the end of the process of exhaling, there is a hissing sound. At this point, try to think that your disorders are coming out of your nose.
- Repeat this process for 5 minutes.

Benefits of Kapalabhati Pranayama

- It generates heat in the system to help dissolve toxins and waste matter.
- It adds luster and beauty to your face and you get glowing skin.
- It improves digestion, improves the function of kidneys and liver.
- If you are looking for reducing belly fat then Kapalabhati helps a lot.
- Daily practice of kapalabhati can cure all general intestinal problems.
- It helps reduce stress in the eyes, thus curing dark circles around the eyes.
- It improves the blood circulation problem in whole body parts.
- It also helps in regaining poise in emotions.
- Kapalabhati triggers your abdominal region, so it is beneficial for diabetic patients.
- It calms your mind and rejuvenates your digestion systems.
- It also helps in the respiratory related problems.

Cognative Variables

Long-term memory

The purpose of the third stage, Long Term Memory (LTM), is to serve as a storehouse for information that must be kept for long periods of time. Once information is transferred from STM, it is organised and integrated with other information in LTM. It remains there until the need to retrieve it. Then it is sent back to STM for use. The test used here was devised by Dr. B.B. Asthana.

Purpose

The aim of the experiment is to find out the effect of rehearsal of paired-associates on the long-term memory of the subject when tested after two minutes of interpolated task.

Equipment required

- Data sheet
- Stop watch
- Memory Cards
- Paper and pencil

Procedure instructions

After seating the subject comfortably, the following instructions were given to the testees.

I will perform an experiment to test your memory. Kindly be attentive. I will explain to you what to do. I will show you some pairs of words one by one after giving you a

ready signal. Just after showing you the pairs, I will say a number, say, 1, 2, 3, or 4. Your task is to speak aloud the pairs presented to you either once, twice, thrice, or four times, depending on the number spoken by me.

I'll give you another number right after that. You note it down on the page supplied to you and start writing the reverse number, starting from the number given to you with a difference of three, e.g., if you are asked to stop. As soon as I say'stop', you have to speak out the pair originally presented to you. The same procedure will be repeated 16 times. The success of the experiment depends on your cooperation, so kindly be attractive towards the task.

After assuring that the subject had followed and fully understood the task, the proper experiment was started. Each pair was presented for 2 secs., with the help of the memory drum (or following cards for 2 secs. with the help of a stop watch). 'E' presented the pair of words after giving the ready signal. Immediately after presenting the stimulus pair, 'E' speaks the number 1, 2, 3, or 4 according to the sequence given in the data sheet. 'S' repeats the pair according to the number given to him. Now 'E' speaks another number and 'S' starts writing backward according to the number given to him. Now 'E' starts a stop watch simultaneously and the task continues for 2 minutes. 'E' now ask the subjects to stop. Subject, on hearing'stop', reproduces the pair of words presented to him which are noted down by 'E' on the data sheet. The same procedure was followed for all the 16 pairs of words.

Scoring

Sr. No.	Stimulus words	Time to be Repeated	Number string	Response
1	QUEEN-PONY	1	87	
2	FRUIT-SOLDIER	2	67	
3	BUS-COW	4	97	
4	SHIRT-JEEP	3	55	
5	RAT-CAP	2	56	
6	SWORD-TREE	4	77	
7	DOG-CAR	3	98	
8	FROCK-HEN	1	86	
9	BALLOON-FLOWER	4	84	
10	GEM-FAN	3	44	
11	LION-SHIP	1	48	
12	BAT-COAT	2	53	
13	PEN-CAT	3	56	
14	DEER-BOAT	1	89	

15	BADGE-SHEEP	2	98	
16	HAT-FOX	4	65	

Statistical Analysis

The responses should be tabulated according to table 3. Then find out the correct percent recall of the four retention intervals and compare them.

Table

No. of Repetitions	Number of correct responses	percentage
1		
2		
3		
4		

Plate-XIX. Subject responding, the response to the Long Term Memory Questionnaire

Intelligence Test

The mixed-type group test of intelligence is a test of human intelligence developed by Dr. P. N. Mehrotra of the natural psychological corporation. The feature of this test is to be conducted on its ability to apply knowledge to manipulate one's environment or the ability to learn or understand, and also the skilled and also the skilled use of reason.

The purpose of the test is to monitor the cognitive development of the subject.

Equipment required- Mixed type group test of intelligence questionnaire.

Procedures: The presence of intelligence is primarily a group test, which can also be used for individual testing as well. The instructions for each part of the test that is verbal and non-verbal and are printed on the test form. The answers to these questions are to be given by the subjects on the answer sheet supplied to them. To minimise the work of writing on the part of a testee, the answers have been framed in such a manner that the work of writing on the part of a testee has been framed in such a manner that the testee has to give an answer to a question in digits from the whole test consists of only 20 minutes of work, i.e., 10 minutes each for verbal and non-verbal.

When the pupils are properly seated in the appropriate position, the tester should start with some preliminary talk to them regarding the test. Thereafter, the test-booklets along with answer sheets for the verbal test should be distributed among pupils with the assistance of helpers who may be the senior students of the school.

Later, the tester should request the pupils that they should fill in the required columns given on the above side of the answer-sheet. When the pupils say that they have filled in the required columns, the tester should enquire from the pupils if there is any difficulty in filling the answers in the appropriate columns of the answers-sheets given to them. When the tester himself is satisfied, he should announce, "Do not start the work until you are asked."

When these preliminaries are completed, the work should be given to the pupils to start the work. The time must be noted. After ten minutes, the testee is asked to stop his results of a verbal test and the same procedure can be used for nonverbal tests. No extra time should be given to any of the pupils.

Scoring: An easy method of scoring in the present test has been followed. In each test, only one correct answer is to be selected by the pupil for one question from the different alternatives given under each question. In scoring, credit of one point should be given for each correct answer and zero for each incorrect answer. No marks should be deducted for wrong answers. For scoring, keys have been prepared for verbal and non-verbal tests separately. After setting the score key on the answers-sheet, the wrong and left-out questions should be crossed out. The number of correct questions should be counted in each test, i.e. verbal and non-verbal, which becomes the raw score of a pupil. This raw score can be interpreted in any manner according to different types of norms given.

Statistical basis of Intelligence classification

Classification of intelligence	Limits of terms of PE	T-score Limit
Very superior	+3PE and above	70 and above
Superior	+2PE to +3PE	63-70
Bright average	+1PE to +2PE	57-63
Average	-1PE to +1PE	43-57
Dull average	-PE to -2PE	37-43
Inferior	-2PE to -3PE	30-37
Very inferior	-3PE and below	30 and below

Plate-XX. Subject Responding, the Response to the Intelligence Questionnaire

Resting Pulse Rate (Radial Pulse)

"The number of frequencies of the heart beat in one minute when an individual is in a resting condition."

Purpose

A stopwatch is required to measure the resting pulse rate.

Procedure

Flex the elbow of the subject and keep the lower part of the arm across the chest and support the wrist of the subject by grasping the better aspect with the help of the thumb. Place the index and middle finger on the inner aspect of the subject's wrist over the radial artery by applying light but firm pressure until pulse is palpated. Once the palpate is identified, count the pulse rate by using a stop watch. Count the number of beats for 30 seconds and dered multiply by 2 to get the total number of beats in one minute as recorded, and that is considered as the performance of the individual.

Plate-XXI. Subject Performing the Resting Pulse Rate

Maximum Oxygen Consumption (VO2 max)

The Cooper 12-minute Run Test

The Cooper 12 minute run is a popular Maximal Running Test of aerobic fitness, in which participants try and cover as much distance as they can in 12 minutes.

Purpose: To test aerobic fitness (the ability of the body to use oxygen to power it while running).

Equipment required: Flat oval or running track, marker cones, recording sheets, stop watch.

Procedure

Place markers at set intervals around the track to aid in measuring the completed distance. Participants run for 12 minutes, and the total distance covered is recorded. Walking is allowed, though the participants must be encouraged to push themselves as hard as they can to maximize the distance covered.

Scoring

There are cooper test norm tables for general guidelines for interpreting the results of this rate for adults. There are also several equations that can be used to estimate the score.

Plate – XXII. Subject Performing the Cooper 12-Minute Run Test

Statistical techniques

The pre-test and post-test random group experimental design were used as experimental design in which 120 female subject were selected as subjects the selected subjects were divided into four groups of thirty subjects each.

ANOVA was used to find out significant mean difference in pre-test and post-test scores of different groups with respect to each parameter. ANCOVA was used to find out significant adjusted post-test mean difference of four groups with respect to each parameter and Seheffe's Post hoc test was used to find out pair-wise comparisons between groups with respect to each parameter.

All the statistical analysis was carried out with the help of the software package of Social science 16.0 Version for WINDOWS.

CHAPTER- IV

ANALYSIS AND INTERPRETATION OF DATA

The aim of the research work was to find out the Effect of Asanas, Pranayama and Kriyas on cognitive and physiological variables of women. For the purpose of this research work 120 women subjects between age group 19-23 years belonging to smt.Bangaramma Sajjan Arts and Commerce College for Women, of Vijayapura, District of Karnataka state were selected as subjects for the present study. The selected 120 subjects were divided into four groups. Group I treated as Asanas training group, Group II treated as Pranayama group, Group III treated as Kriyas training and Group IV considered as control group.

Asana group underwent Asana training, Pranayama group underwent Pranayama training and Kriyas group underwent Kriyas training for Sixteen weeks. The duration of the Practice session allowed to the experimental groups Sixty minutes in each day and the declaration of training for Sixteen weeks. The control group did not participate in any of the training programme other than their routine work.

The Pre-test and post-test data was collected on cognitive and physiological variables. The collected data were analyzed Appling ANCOVA followed by Scheffe's post hoc test with 0.05 level of significant the same has been presented with the tabulation and interpretation

Pre and post test data was gathered on the basis of Cognitive and Physiological Variables and the same as described in the following tables.

TABLE NO.4.1 (a) DATA AND TEST OF SIGNIFICANCE (ANOVA, ANCOVA AND SCHEFFES POST HOC) OF PRE TEST AND POST TEST AND ADJUSTED POST-TEST SCORES ON LONG TERM MEMORY IN THE EXPERIMENTAL GROUP AND CONTROL GROUP.

LTM	Group	Mean	SD	SV	SS	Df	MS	F	P
Pre test ANOVA	G1	28.5333	10.60492	BG	91.369	3	30.456	.295	.825
	G2	28.7417	10.33709	WG	11960.254	116	103.106		
	G3	28.7417	10.33709			119			
	G4	26.6667	9.28693	T	12051.623				
LTM	**Group**	**Mean**	**SD**	**SV**	**SS**	**Df**	**MS**	**F**	**P**
Post test ANOVA	G1	86.4583	11.28817	BG	57885.935	3	19295.312	65.878	.000
	G2	67.1833	20.63527	WG	33975.585	116	292.893		
	G3	51.1167	23.06248	T	91861.520	119			
	G4	26.5667	9.29820						
LTM	**Group**	**Mean**	**SD**	**SV**	**SS**	**Df**	**MS**	**F**	**P**
	G1	86.268	2.983	BG	55810.854	3	18603.618		

Adj.post ANOVA	G2	66.884	2.983	WG	30681.573	115	266.796	69.730	.000
	G3	50.817	2.983	T					
	G4	27.356	2.991		86492.418	118			

** Significant 0.05 level table value 2.76

Table 4.1. (a). Indicates that the AM ± SD Pre-test Long term memory scores of G1, G2, G3 and G4 are 28.533±10.60492 28.7417± 10.33709, 28.7417± 10.33709 and 26.6667± 9.28693 respectively. The AM ± SD Post-test Long Term Memory scores of G1, G2, G3 and G4 are 86.4583± 11.28817, 67.1833± 20.63527, 51.1167±23.06248 and 26.5667±9.29820 respectively.

The AM ± SD adjusted Post-test Long Term Memory scores of G1, G2, G3 and G4 are 86.268± 2.983, 66.884± 2.983, 50.817±2.983 and 27.356± 2.991 respectively, it can be inferred that there do not exist any significant mean differences in the pre- test of Long Term Memory scores of experimental and control groups (F= .295,P> 0.05).

That means all the groups have same pre-test mean long term memory scores and therefore the groups are equable for their final scores.

There do exist significant mean difference in the post-test long term memory scores of Experimental and control groups (F= 65.878, P < 0.05). Further, if the effect due to initial pre-test scores was eliminated, the adjusted post-test mean long term memory scores also showed significant difference among various groups (F= 69.730,P < 0.05).

Since ANCOVA showed significant difference in long term memory among various groups, Scheffe's post-hoc pair- wise comparisons has been carried out. The details are shown in table 4.1. (b)

TABLE- 4.1 (b)

DATA AND TEST OF SIGNIFICANCE OF SCHEFFES POST HOC PAIR-WISE COMPARISON LONG TERM MEMORY

Group	Group2	MD	P
G1	G2	19.384(*)	.000
G1	G3	35.451(*)	.000
G1	G4	58.912(*)	.000

G2	G3	-19.384(*)	.000
G2	G4	16.067(*)	.000
G3	G4	23.461	.000

** Significant 0.05 level

G1 Asanas Group

G2 Pranayama Group

G3 Kriyas group

G4 Control group

Table 4.1 (b) it is seen that after Scheffe's test all the Experimental groups showed statistically significant difference compared to the control group with respect to long term memory. However, groups G1 to G2, to G3 and G2 to G3 do not differ significantly with respect to long term memory and the same is displayed in the figure 4.1 (c).

FIGURE4.1(c) COMPARATIVE BAR CHART OF ADJUSTED POST-TEST SCORES ON LONG TERM MEMORY IN THE EXPERIMENTAL GROUP AND CONTROL GROUP

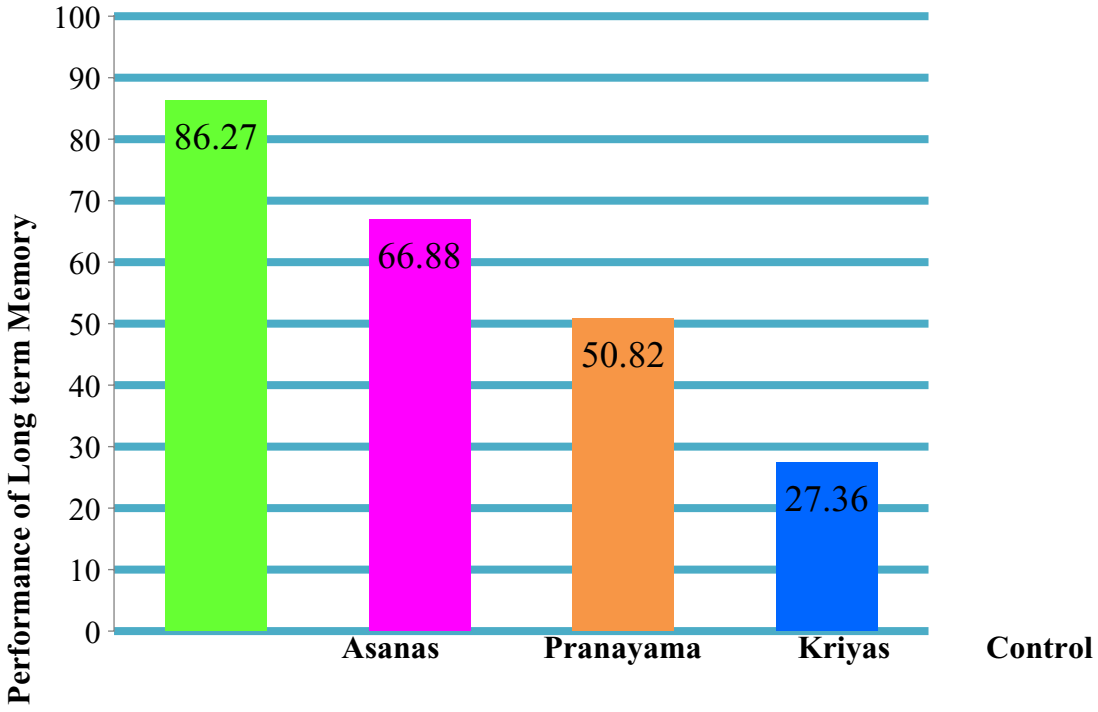

Figure 4. 1 (c) the above figure indicates that long term memory performance improved significantly over the 16 weeks training period Asanas, Pranayama and Kriyas training groups; however, the difference among the three groups were significant. The Asanas training group significantly improvedlong term memory performance after 16 week training period. The Pranay in ama group showed improved in long term memory performance after 16 weeks trainig period. The Kriya group also showed improved than Asana group and Control group. However Control group did not produce any significant improvement on long term memory.

TABLE NO. 4.2 (a) DATA AND TEST OF SIGNIFICANCE (ANOVA, ANCOVA AND SCHEFFES POST HOC) OF PRE TEST AND POST TEST AND ADJUSTED POST TEST SCORES ON INTELLIGENCEIN THE EXPERIMENTAL GROUPS AND CONTROL GROUP.

IQ	**Group**	**Mean**	**SD**	**SV**	**SS**	**Df**	**MS**	**F**	**P**
Pre test	G1	39.5500	8.50593	BG	355.006	3	118.335		
ANOVA	G2	38.0667	6.52810	WG	6291.142	116	54.234	2.182	.825
	G3	37.3000	6.51867		6646.148	119			
	G4	34.8000	7.71206	T					
IQ	**Group**	**Mean**	**SD**	**SV**	**SS**	**Df**	**MS**	**F**	**P**
Post test	G1	67.1333	17.09957	BG	38462.092	3	12820.697		
ANOVA	G2	84.4000	12.53849	WG	18590.833	116	160.266		
	G3	57.7667	11.48817		57052.925			79.996	.000
	G4	34.8000	7.71206	T		119			
IQ	**Group**	**Mean**	**SD**	**SV**	**SS**	**Df**	**MS**	**F**	**P**
Adj.post	G1	65.643	12.141	BG	33468.304	3	11156.101		
ANOVA	G2	83.952	12.121	WG	15485.592	115	134.657	82.848	.000
	G3	57.857	12.119	T	8953.896				
	G4	36.647	12.153			118			

** Significant 0.05 leveltable value 2.76

Table 4.2. (a). Indicates that the AM ± SD Pre-test Intelligence of G1, G2, G3 and G4 are 39.5500±8.50593, 38.0667±6.52810, 37.3000 ± 6.51867 and 34.8000± 7.71206 respectively. The AM ± SD Post-test Intelligence scores of G1, G2, G3 and G4 are 67.1333± 17.09957, 8440000± 12.53849, 57.7667±11.48817 and 34.8000±7.71206 respectively.

The AM ± SD adjusted Post-test Intelligence scores of G1, G2, G3 and G4 are 65.643± 12.141, 83.952± 12.121, 57.857±12.119 and 36.647± 12.153 respectively, it can be inferred that there do not exist any significant mean differences in the pre-test Intelligence scores of experimental and control groups (F= 2.182,P> 0.05).

That means all the groups have same pre test mean scores of Intelligence and therefore the groups can be equable for their final scores.

There do exist significant mean difference in the post test Intelligence scores of experimental and control groups (F= 79.996, P < 0.05). Further, if the effect due to initial pre test scores was eliminated, the adjusted post test mean Intelligence scores also showed significant difference among various groups (F= 82.848,P < 0.05).

Since ANCOVA showed significant difference in Intelligence among various groups, Scheffe's post hoc pair- wise comparisons has been carried out. The details are shown in table 4.2. (a)

TABLE- I (a)

DATA AND TEST OF SIGNIFICANCE OF SCHEFFES POST HOC PAIR-WISE COMPARISON INTELLIGENCE

Group	Group2	MD	P
G1	G2	-18.309(*)	.000
G1	G3	7.786	.000
G1	G4	28.996(*)	.000
G2	G3	18.309(*)	.000
G2	G4	26.095(*)	.000
G3	G4	-7.786	.000

** Significant 0.05 level

G1 Asanas Group

G2 Pranayama Group

G3 Kriyas group

G4 Control group

Table 4.2 (a) it is seen that after Scheffe's test all the Experimental groups showed statistically significant difference compared to the control group with respect to Intelligence. However, groups G1 to G2, to G3 and G2 to G3 do not differ significantly with respect Intelligence and the same as displayed in the figure 4.2 (c).

FIGURE 4.2(c) COMPARATIVE BAR CHART OF ADJUSTED POST-TEST SCORES ON INTELLIGENCE IN THE EXPERIMENTAL GROUP AND CONTROL GROUP

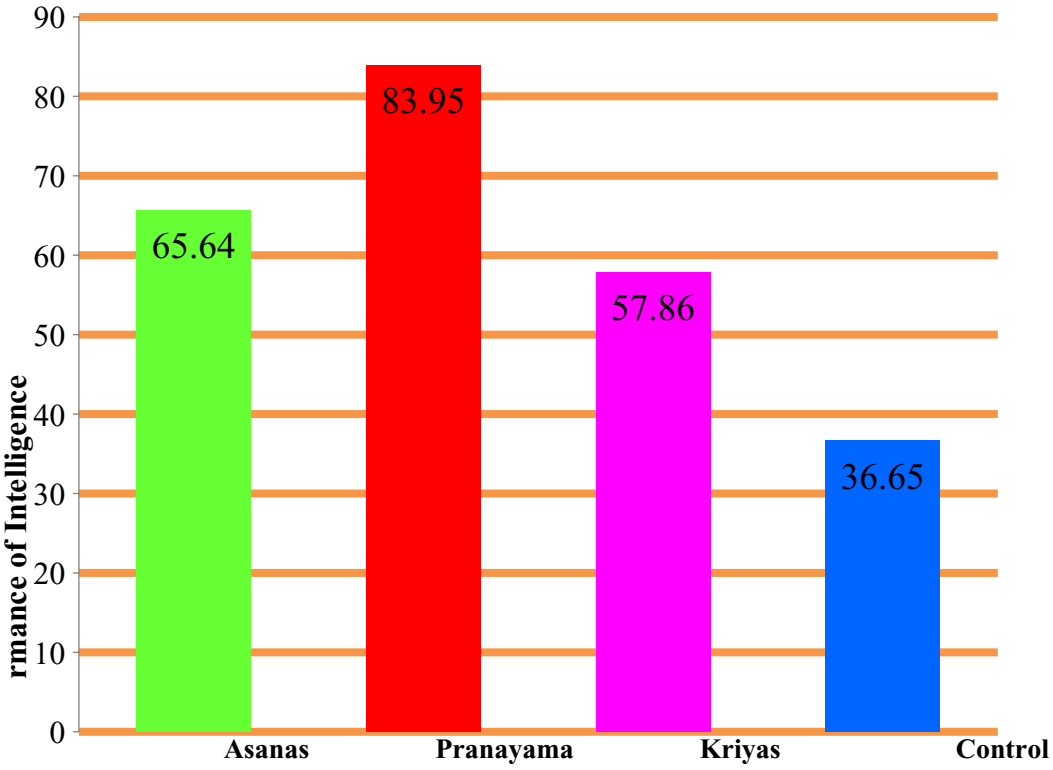

Figure 4.2. (c) The above figure indicates that Intelligence performance has improved significantly over 16 weeks training period on Asanas, Pranayama and

Kriyas groups; however, the differences among the three groups were significant. The Asanas training group significantly showed improved in Intelligence performance after 16 week of training period. The Pranayama training groups showed improved in Intelligence performance after 16 weeks of training period. The Kriyas training groups also showed improvement in Asanas group and Control group. However Control group did not produce any significant improvement on Intelligence.

TABLE NO 4.3 (a) DATA AND TEST OF SIGNIFICANCE (ANOVA, ANCOVA AND SCHEFFES POST HOC) OF PRE TEST AND POST TEST AND ADJUSTED POST TEST SCORES ON RESTING PULSE RATE IN THE EXPERIMENTAL GROUP AND CONTROL GROUP.

RPR	Group	Mean	SD	SV	SS	Df	MS	F	P
Pre test	G1	101.1333	9.78646	BG	36.625	3	12.208		
ANOVA	G2	100.8333	9.27393	WG	9770.300	116		.145	.825
	G3	101.7333	8.34569	T	9806.925	119	84.227		
	G4	100.2000	9.24532						
RPR	**Group**	**Mean**	**SD**	**SV**	**SS**	**Df**	**MS**	**F**	**P**
Post test	G1	73.7667	13.16915	BG	31992.425	3	10664.142		
ANOVA	G2	56.7333	4.96841	WG	10209.567	116		121.165	.000
	G3	87.9667	8.08354	T	42201.992	119	88.014		
	G4	100.5667	9.41270						
RPR	**Group**	**Mean**	**SD**	**SV**	**SS**	**Df**	**MS**	**F**	**P**
Adj.post	G1	73.714	11.486	BG	32915.651	3	10971.884		
ANOVA	G2	56.726	11.486	WG	7421.555	116	66.264	165.579	.000
	G3	88.044	11.493	T					
	G4	101.338	11.492		40337.206	119			

** Significant 0.05 level table value 2.76

Table 4.3. (A). Indicates that the AM ± SD Pre-test resting pulse rate of G1, G2, G3 and G4 are 101.13333±9.78646, 100.8333±9.27393, 101.73333± 8.34569 and 100.2000± 9.24532 respectively. The AM ± SD Post-test resting pulse rate scores of

G1, G2, G3 and G4 are 73.7667± 13.16915, 56.7333± 4.96841, 87.9667±8.08354and 100.5667±9.41270respectively.

The AM ± SD adjusted Post-test resting pulse rate scores of G1, G2, G3 and G4 are 73.714 ± 11.486, 56.726 ± 11.486, 88.044 ±11.493and 101.338± 11.492 respectively, it can be inferred that there do not exist any significant mean differences in the pre-test resting pulse rate scores of experimental and control groups (F= .145,P> 0.05).

That means all the groups have same pre test mean asana scores and therefore the groups are equable for their final scores.

There do exist significant mean difference in the post test resting pulse rate scores of experimental and control groups (F= 121.165, P < 0.05). Further, if the effect due to initial pre test scores was eliminated, the adjusted post test mean resting pulse rate scores also showed significant difference among various groups (F= 165.579,P < 0.05).

Since ANCOVA showed significant difference in resting pulse rate among various groups, Scheffe's post hoc pair- wise comparisons has been carried out. The details are shown in table 4.3. (a)

TABLE- I (a)

DATA AND TEST OF SIGNIFICANCE OF SCHEFFES POST HOC PAIR-WISE COMPARISON RESTING PULSE RATE

Group	Group2	MD	P
G1	G2	16.988(*)	.000
G1	G3	-14.330(*)	.000
G1	G4	-27.624(*)	.000
G2	G3	-16.988(*)	.000
G2	G4	-31.318(*)	.000
G3	G4	14.330(*)	.000

** Significant 0.05 level

G1 Asanas Group

G2 Pranayama Group

G3 Kriyas group

G4 Control group

Table 4.3 (a) it is seen that after Scheffe's test all the Experimental groups showed statistically significant difference compared to the control group with respect to resting pulse rate. However, groups G1 to G2, to G3 and G2 to G3 do not differ significantly with respect resting pulse rate and the same as displayed in the figure 4.3 (c).

FIGURE No. 4.3 (c) COMPARATIVE BAR CHART OF ADJUSTED POST-TEST SCORES ON RESTING PULSE RATE IN THE EXPERIMENTAL GROUP AND CONTROL GROUP

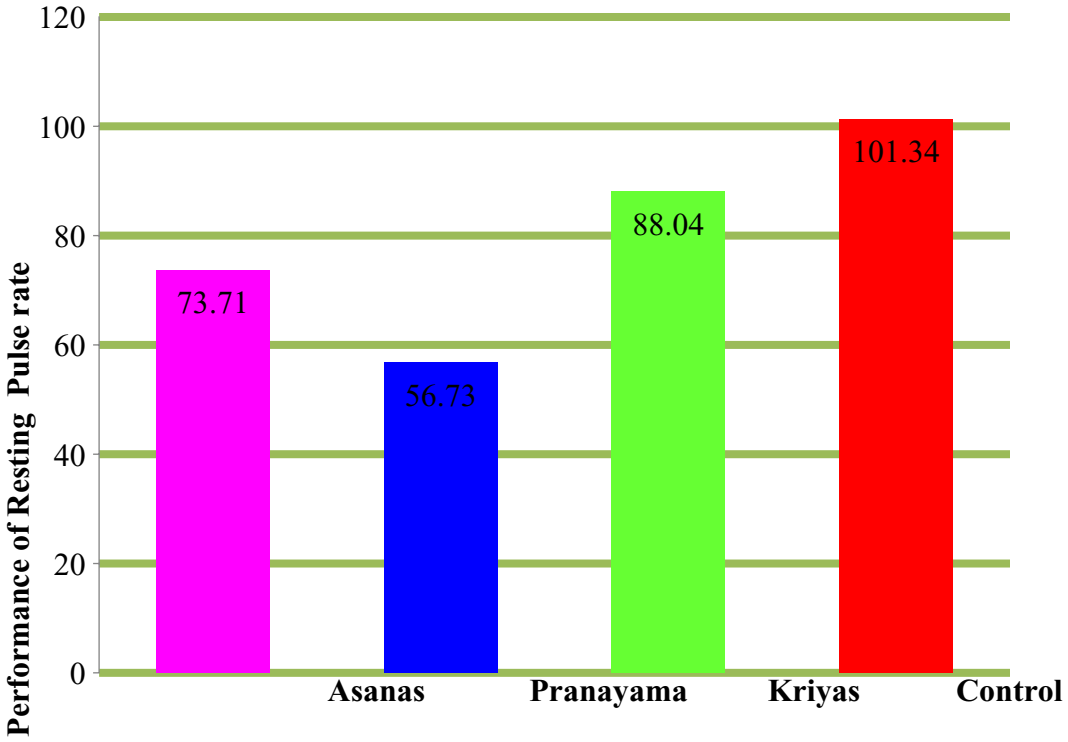

Figure No. 4. 3 (c) The above figure indicates that Resting Pulse Rate performance decreased significantly over the 16 weeks training period of Asanas, Pranayama and Kriyas training groups; however, the difference among the three

groups were significant. The Asanas group significantly decreased resting pulse rate performance after 16 week training period. The Pranayama group decreased resting pulse rate performance after 16 weeks of training. The Kriyas group also produced decreased performance than Asanas, group and Control group. However Control group did not produce any significant improvement on resting pulse rate.

TABLE 4.4 (a) DATA AND TEST OF SIGNIFICANCE (ANOVA, ANCOVA AND SCHEFFES POST HOC) OF PRE TEST AND POST TEST AND ADJUSTED POST TEST SCORES ON VO2 MAX IN THE EXPERIMENTAL GROUP AND CONTROL GROUP.

Vo2 Max	**Group**	**Mean**	**SD**	**SV**	**SS**	**Df**	**MS**	**F**	**P**
Pre test ANOVA	G1	27.8869	3.99370	BG	10.942	3	3.647	.434	.729
	G2	27.3182	2.19526	WG	974.960	116	8.405		
	G3	27.2646	2.18524	T	985.902	119			
	G4	27.0787	2.84169						
Vo2 Max	**Group**	**Mean**	**SD**	**SV**	**SS**	**Df**	**MS**	**F**	**P**
Post test ANOVA	G1	84.3367	6.53504	BG	55790.868	3	18596.956	83.474	0.0000
	G2	69.5593	19.60136	WG	25843.329	116	222.787		
	G3	50.8188	21.41513	T	81634.197	119			
	G4	26.6794	2.37097						
Vo2 Max	**Group**	**Mean**	**SD**	**SV**	**SS**	**Df**	**MS**	**F**	**P**
Adj.post ANOVA	G1	84.270	6.747	BG	55129.696	3	18376.565	81.829	0.0000
	G2	69.569	7.736	WG	25825.782	116	224.572		
	G3	50.835	5.737	T		119			
	G4	26.721	7.740		80955.478				

** Significant 0.05 level table value 2.76

Table No. 4.4. (a). Indicates that the AM ± SD Pre-test VO2 Max of G1, G2, G3 and G4 are 27.8869 ±3.99370, 27.3182±2.19526, 27.2646 ± 2.18524 and 27.0787± 2.84169 respectively. The AM ± SD Post-test VO2 Max scores of G1, G2, G3 and G4 are 84.3367± 6.53504, 69.5593± 19.60.136, 50.8188±21.41513 and 26.6794±2.37097 respectively.

The AM ± SD adjusted Post-test VO2 Max scores of G1, G2, G3 and G4 are 84.270± 6.747, 69.569± 7.736, 50.835±5.737 and 26721± 7.740 respectively, it can be inferred that there do not exist any significant mean differences in the pre-test VO2 Max scores of experimental and control groups (F= .434,P > 0.05).

That means all the groups have same pre test mean VO2 Max scores and therefore the groups are equable for their final scores.

There do exist significant mean difference in the post test VO2 Max scores of experimental and control groups (F= 83.474, P < 0.05). Further, if the effect due to initial pre test scores was eliminated, the adjusted post test mean VO2 Max scores also showed significant difference among various groups (F= 81.829,P < 0.05).

Since ANCOVA showed significant difference in VO2 Max among various groups, Scheffe's post hoc pair- wise comparisons has been carried out. The details are shown in table 4.4 (a)

TABLE- I (a)

DATA AND TEST OF SIGNIFICANCE OF SCHEFFES POST HOC PAIR-WISE COMPARISON VO2 MAX

Group	Group2	MD	P
G1	G2	14.701(*)	.000
G1	G3	33.434(*)	.000
G1	G4	57.549(*)	.000
G2	G3	18.733(*)	.000
G2	G4	42.848(*)	.000
G3	G4	24.114(	.000

** Significant 0.05 level

G1 Asanas Group

G2 Pranayama Group

G3 Kriyas group

G4 Control group

Table 4.3 (a) it is seen that after Scheffe's test all the Experimental groups showed statistically showed significant difference compared to the control group with respect to VO2 Max rate. However, groups G1 to G2, to G3 and G2 to G3 do not differ significantly with respectVO2 Max and the same as displayed in the figure 4.4 (c).

FIGURE No. 4.3 (c) COMPARATIVE BAR CHART OF ADJUSTED POST-TEST SCORES ON VO2 MAX IN THE EXPERIMENTAL GROUP AND CONTROL GROUP

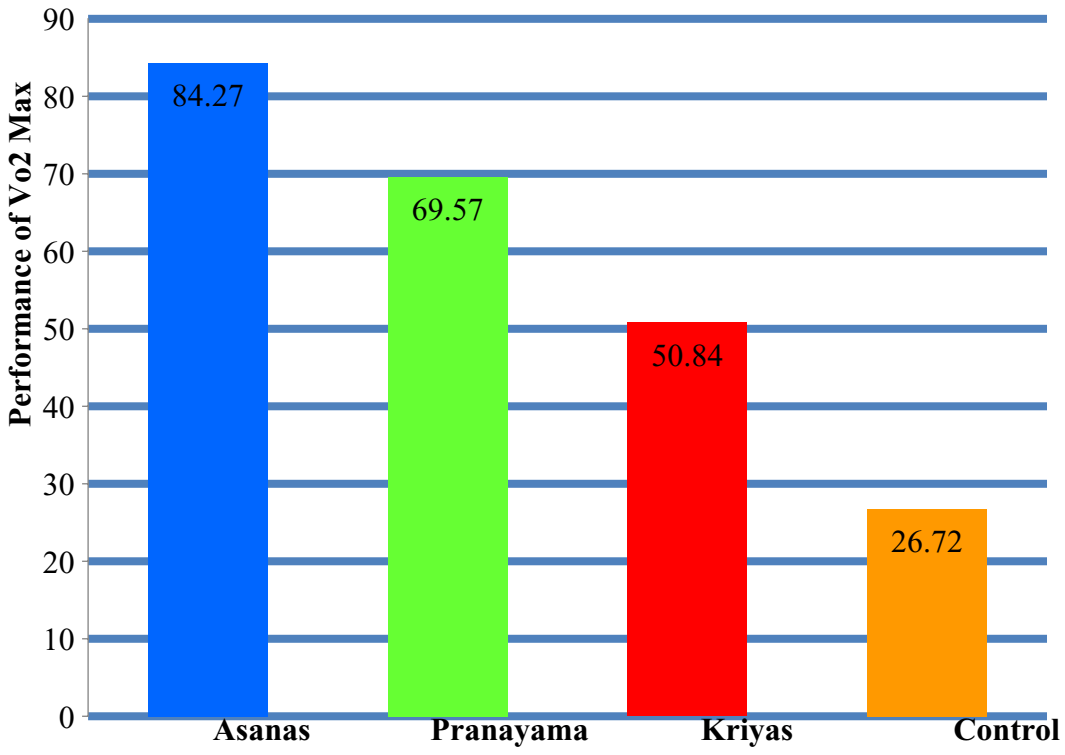

Figure No. 4. 4. (c) the above figure indicates that VO2 Max performance showed improved significantly over the 16 weeks training of Asanas, Pranayama and Kriyas training groups; However, the difference among the three groups were significant. The Asanas group significantly showed improvement in VO2 Max performance after 16 week of training period. The Pranayama group showed improved in VO2 Max performance after 16 week of training period. The Kriyas group also produced VO2 Max than Asanas group and Control group. However, C ontrol group did not produce any significant improvement on VO2 Max.

Discussion of Findings

The purpose of the study was to investigate the effect of 16 weeks of Asanas, Pranayama and Kriyas training on women. The result of the study indicates tremendous improvement on Long Term Memory, Intelligence, Resting Pulse Rate and Vo2 max.

The result of the Asanas, Pranayama and Kriyas training group indicates the significant improvement on the Long Term Memory of the subjects. The result of the study is justified with following studies. The result of the present study was also supported by **ArpitabenTulsibhai Patel and PareshkumarB.Acharya 2015, Sandy Kimbrough, Rick Balkin, (2009), Verma and Gupta (1990**), **Naveen, Nagarathana, Nagendra and Telles (1997**) **and Baddeley & Hitch (1974).**

The result of the Asanas, Pranayama and Kriyas training indicates significant improvement on the Intelligence of the subjects. The result of the study is justified with following studies. The result of the present study was also supported by **Dabre, Pravin C.; Pingale, P. V.; Tejrao, Dahake; Humbad, P. N. (2011),Aruna et al. (2006**),**Preiss and Franova (2006), De Smedt et al. (2003**),**Mc Manusetal.(2003), Vishwajeet Singh, Dr R Nagarathna., Dr H R Nagendra, Petrideset al.(2002**), **Nommay (1988), Sheikh (1990**)**and Barnes and Nagarkar (1989).**

The result of the Asanas, Pranayama and Kriyas training indicates significant improvement on the Resting Pulse Rate of the subjects. The result of the study is justified with following studies. The result of the present study was also supported by **Vijayalakshmi &Jayobal (2013), R. AravindKumar1, Ramaprabha P, Bhuvaneswari (2013),VidhyaSree (2012),Saroja,(2011),Sekar Babu and Kulothugan (2011)),Rajakumar, (2010),Umesh. C. Muktamath, Vinutha. U. Muktamath. (2010), Sathyaveni (2009), Jesintha and Parthiban, (2007), Ramesh, et.al. (2007), Shenbagavalli and Rajkumar, (2007), Padmadevi, (2007) and Samsudeen and Kalidasan, (2007).**

The result of the Asanas, Pranayama and Kriyas training indicates significant improvement on the Vo2 max of the subjects. The result of the study is justified with following studies. The result of the present study was also supported by **NarraSrinivas, (2012), Amutha, (2010), Sathyaveni (2009), Ray (2001),Murugesan, Govindarajan and Bera (2000) and M.S. Nayer (1975).**

Discussion of Hypothesis

The research hypothesis statement stated that 16 weeks of Asanas, Pranayama and Kriyas training improves the performance of the Asanas, Pranayama and Kriyas on Cognitive and Physiological Variables of women. The statement of the research hypothesis agrees with the results, Hence, the hypothesis was accepted.

The research hypothesis statement stated that 16 weeks of Asanas, Pranayama and Kriyas training improves the performance of the Long term memory for women. The statement of the research hypothesis agrees with the results, Hence, the hypothesis was accepted.

The research hypothesis statement stated that 16 weeks of Asanas, Pranayama and Kriyas training improves the performance of the Intelligence for women. The statement of the research hypothesis agrees with the results, Hence, the hypothesis was accepted.

The research hypothesis statement stated that 16 weeks of Asanas, Pranayama and Kriyas training improves the performance of the Resting pulse rate for women. The statement of the research hypothesis agrees with the results, Hence, the hypothesis was accepted.

The research hypothesis statement stated that 16 weeks of Asanas, Pranayama and Kriyas training improves the performance of the Vo2 max for women. The statement of the research hypothesis agrees with the results, Hence, the hypothesis was accepted.

CHAPTER-V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The purpose of the study was to investigate the "Effect of Asanas, Pranayama and Kriyas on Cognitive and Physiological Variables of Women". The researcher selected Long term Memory and Intelligence for Cognitive Variables, Resting pulse rate and Vo2 Max for Physiological Variables.

Sixteen weeks of Asanas, Pranayama and Kriyas training were given to 120 college women subjects before practice the researcher conducted pre-test performance on Cognitive and Physiological Variables. The performances of the pre-test were recorded. After 16 weeks of Asanas, Pranayama and Kriyas training the post-test performance were recorded on Cognitive and Physiological performance. The result of the post-test performance indicates significant improvement.

Conclusions

Based on the findings the following conclusions were drawn from the present study.

- Sixteen weeks of Asanas training has shown significant improvement on Cognitive and Physiological Variables of the subjects.
- Pranayama training has shown significant improvement on Cognitive and Physiological Variables of the subjects.
- Kriyas training has shown significant improvement on Cognitive and Physiological Variables of the subjects.

Recommendations

- Based on the result of the study, the following recommendations were drawn by the investigator.
- The result of the study may help the physical education teachers to improve the Cognitive and Physiological performance variable of the women.
- Coaches can utilize the outcome of the study in their regular training programme.
- Similar study may be conducted to examine the effect of Asanas, Pranayama and Kriyas on Cognitive and Physiological Variables for the different age groups.
- Further, similar research may be undertaken considering male Children as subjects.
- Continues and regular Asanas, Pranayama and Kriyas training programme, in an organized manner, has to be suggested for the occasional participants to obtain desired results in their health related fitness.
- Similar study may be conducted on National and International athletes.
- Similar study may be conducted on rural area girls, boys and school children.
- Similar study may be conducted on college men subjects.
- For the development of Cognitive and Physiological Variables performance Asanas, Pranayama and Kriyas training programme may be included in the Physical education curriculum.

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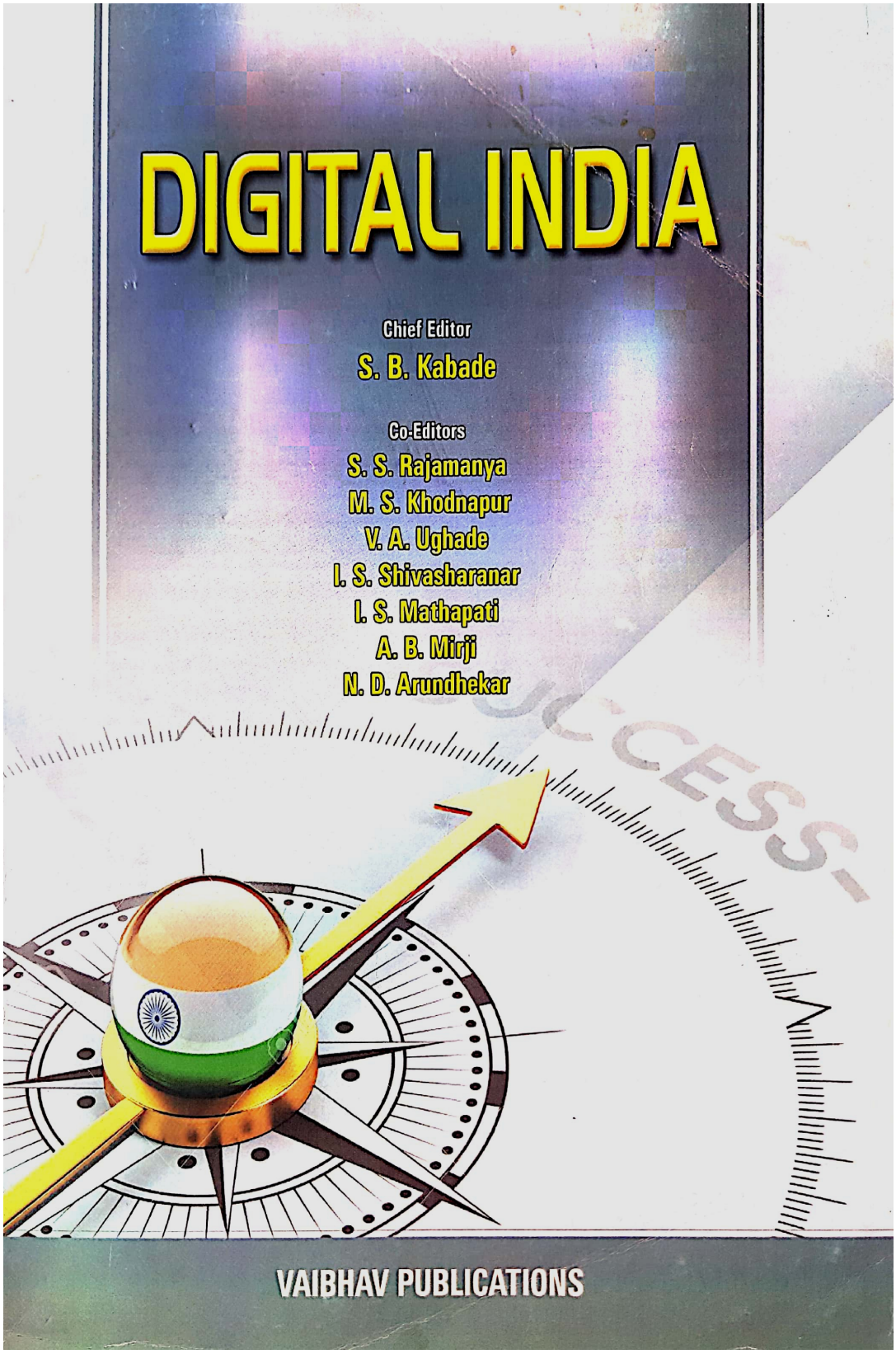
- https://www.yogapedia.com/definition/5187/Nukasana
- https://www.yogapedia.com/definition/ halasana
- https://en.wikipedia.org/wiki/Bhujangasana

APPENDIX-I

RESEARCH PAPERS PRESENTED IN THE INTERNATIONAL AND NATIONAL CONFERENCES PUBLISHED BOOKS

- One Day National seminar on "Digital India" organized by Government First Grade College, Vijayapur-586101.Departmnt of Commerce and Management and Department of PG Studies in commerce in Coordination with IQAC collaboration on 8th April 2019. Presented a paper on the title, **"Yoga Postures Reduce Back Pain".**
- International Virtual Conference on "Digital Teaching, Training & Coaching - An Approach to Physical Education & Sports Sciences, Organized by Government First Grade College, K G F - Kolar - Karnataka. & Smt. G.B. Ankalkoti Govt. First Grade College, Shiggaon – Haveri Karnataka. Collaboration with International Federation of Physical Education, Fitness and Sports Science Association International Journal of Health, Physical Education and Computer Science in Sports A Peer Reviewed (Refereed) International Research Journal - ISRA Journal

Volume 39 • Issue 1, Page No.247-249, ISSN 2231-3265, 22nd and 23rd August 2020, Impact Factor 7.217, Published Paper on **"Effect of Kriyas on VO2 max of women".**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VAIBHAV PUBLICATIONS

Yoga Postures Reduce Back Pain

Dr. Kasturi D. Rajaput, Post Doctoral Fellow, Department of Studies in Physical Education and Sports Science's, Karnataka State Akkamahadevi Women's University, Vijayapura

Abstract

Yoga, the science of union embraces diverse styles like Hatha Yoga, Ashtanga Yoga, Power Yoga, Vinyasa Yoga, Bikram Yoga, etc., that embodies variegated asanas assisting the practitioners to achieve sound physical, mental, and emotional health. From the basic to advance and relaxing to vigorous, each and every yoga posture holistically benefits the body, both internally and externally.

From the likes of standing yoga postures, twisting yoga poses, backbend yoga asana– there are sitting yoga asana suitable for the practitioners of every level, especially the beginners or the ones who face problems doing the standing range of yoga poses. Seated yoga postures give the yoga performers the time and space to build upon their balance and flexibility. A great mind-body energizer– the sitting yoga postures work greatly on building stamina, toning the abdominal organs, massaging the internal tracts, and relieving backaches.

Keywords: Yoga, Back Pain, Cat/Cow, Spinal Twist, Downward Dog, Plow Pose, Seated Forward Fold, Child's Pose, Eagle Pose, Locust Pose, Bow Pose and Triangle Pose

Introduction

Asana is a Sanskrit term which is often translated as "posture" or "pose." Asana can also be translated as "a steady, comfortable seat," particularly for the purpose of meditation.

Many people equate asana with the act of performing fancy, advanced poses. However, anyone of any level of experience can practice (whether beginner, intermediate, or advanced). Individual asanas can also be modified to suit all practice needs and desires.

Our mind is like a pendulum; swinging from past to future, regret and anger to anxiety and fear, happiness to sorrow. It is 'Yoga asana' that enables us to maintain equanimity. Yoga asana is not a mere workout or exercise!

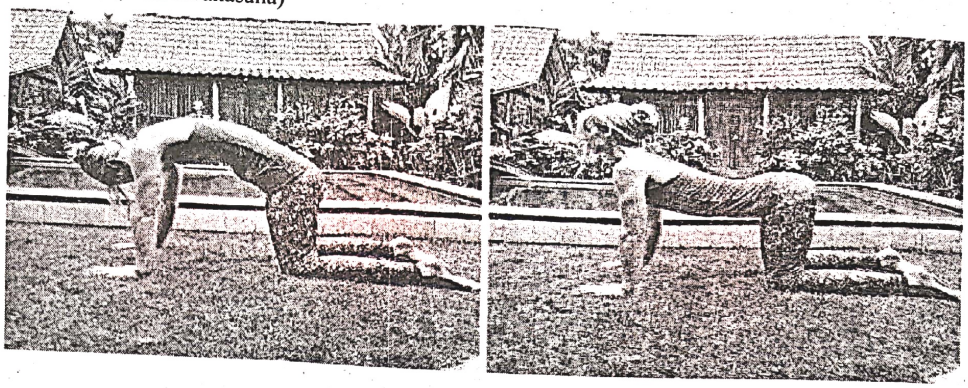
As described in Patanjali's Yoga Sutra - "sthira sukham asanam"–it means Yoga asana is a balance of effort and ease. We give effort to get into the posture and then we relax. Yoga asana brings that balance in every aspect of our life. It teaches us to put effort and then let go, get detached from the result. Yoga asana increases our physical flexibility and expands our mind.

Yoga has to be done with the breath, and with awareness. When we lift our hands for yoga, first we become aware of the arm and then we slowly lift it, synchronized with the breath. It is as graceful as a dance, gliding into one posture from another. The key is to stretch a little more, in each asana, than what we are comfortable and then relax and let go. This little effort to take the body beyond its agreeable limit expands our mind.

Another Yoga Sutra by Patanjali says "prayatna shaithilyaananta samapattibhyam"–Again it reiterates the same philosophy. Give effort and then let go and by doing so Infinity dawns in our awareness, our awareness expands!

In severe cases, medical attention may be necessary, but if the pain is less severe, yoga may be able to help by strengthening the back, stretching it and improving circulation to the spine and nerves. Here are some yoga postures for back pain.

1. Cat/Cow (Chakravakasana)



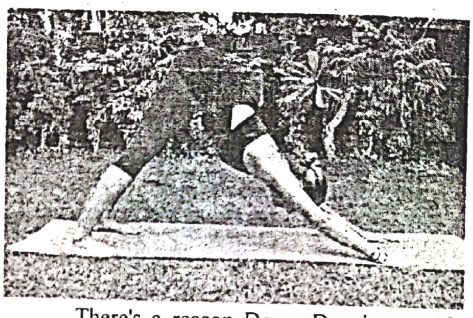
Starting in tabletop position on the hands and knees, alternate between arching the back and rounding it, as push down on the floor with the hands and tops of the feet. These postures help to massage the spine, while also stretching the back and the torso. These postures are a great way to keep the back limber—and happy.

2. Spinal Twist (Marichyasana)

We have many options when it comes to twisting postures. One of the basic and effective ones is Marichyasana Keep the left leg straight and bends the right leg so the foot is flat. Place the right hand on the floor behind the for support, like a tripod, and twist so they can hook the left elbow over the right thigh.

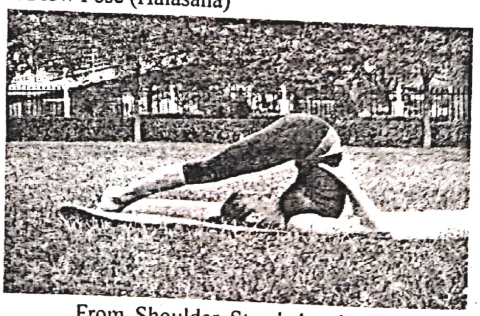
If this is too much, the can also grab hold of the right knee and twist to look over the right shoulder. Other options are to bend the left leg under the bend both legs and let them fall to the side then twist in whichever way the knees are facing.

3. Downward Dog (Adho Mukha Svanasana)



There's a reason Down Dog is one of the most iconic postures in yoga. It can rejuvenate the entire body. Start in tabletop and raise the hips so the body is in an upside down V position. Relax the head and neck and draw the inner thighs toward the back of the room. Spreading the shoulder blades apart will stretch the upper back even more, and reaching the hips up and back will help to open the lower back.

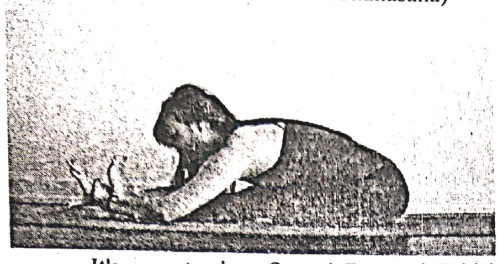
4. Plow Pose (Halasana)



From Shoulder Stand, bend at the hips to bring the toes or top of the feet to the floor. The hands can remain against the back for support, or they can clasp them together, keeping the forearms on the floor. Hold this as long as is comfortable to get a powerful stretch in the shoulders and spine. If

this is too much, the can place a chair behind and the rest the feet on the chair.

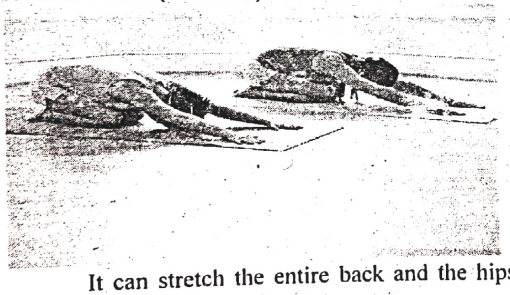
5. Seated Forward Fold (Paschimottanasana)



It's easy to do a Seated Forward Fold in a way that won't benefit the, but doing it right can open the lower back and offer relief from stiffness and pain. From a seated position with the legs extended forward, reach for the shins, ankles, or feet, bending at the hips.

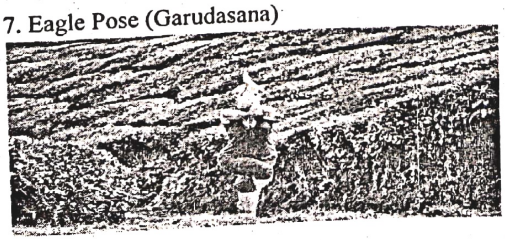
Instead of rounding the back, continue to reach the sternum forward, lengthening the torso. If this hurts the back, bend the knees as needed.

6. Child's Pose (Balasana)



It can stretch the entire back and the hips. Start on all fours, keep the arms forward and sit back so the butt is resting just above the heels. Hold and breathe deeply, feeling the breath reach all the way into the hips. The more the extend in either direction, the more they'll feel relief.

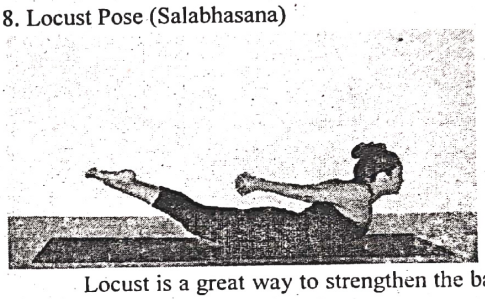
7. Eagle Pose (Garudasana)



This more advanced posture requires balance and strength, but it can help to stretch and open the entire back. From Mountain Pose, with the knees slightly bent, lift the right leg and reach the right thigh over the left. Point the foot toward the floor and either stop here and balance with the toes on the floor, or hook the right foot behind the left calf.

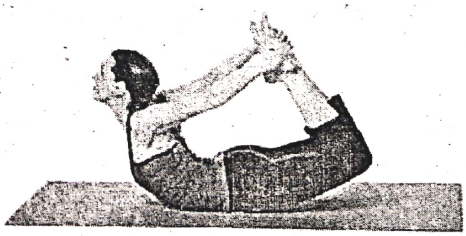
For the arms, bring the right arm under the left and, with elbows bent, bring the palms together. The'll get a powerful stretch by drawing the elbows up and hands away from the face.

8. Locust Pose (Salabhasana)



Locust is a great way to strengthen the back and buttocks. Lie on the stomach with the arms beside the, palms up, the and the forehead flat on the floor. Slowly lift the head, torso, arms, and legs away from the floor. As the do this, the thighs should be rotated in slightly and the want to feel the body elongate from head to toe. Hold this for 30 seconds to a minute. Relax and repeat two to three times.

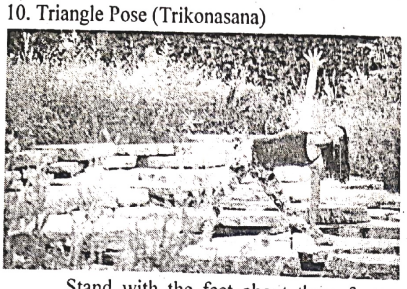
9. Bow Pose (Dhanurasana)



Lying face down, reach the hands toward the ankles and grab hold one at a time. Slowly lift the chest and thighs away from the floor by drawing

the chest forward and the back of the thighs toward the sky. This posture is a wonderful way to strengthen the back muscles.

10. Triangle Pose (Trikonasana)



Stand with the feet about three feet apart and parallel to each other. Rotate the right foot so the right heel is in line with the arch of the left foot. With the arms extended to the side, tilt at the hip to reach the right hand toward the ground, on either side of the foot. Rotate the body to the side and reach the fingers of the left hand toward the sky.

Gaze at the left hand (as long as it doesn't hurt the neck!) and hold for five to seven breaths before switching sides.

When it comes to back pain, prevention is key to a long and pain-free life, but listening to the body is also extremely important. Don't force any posture that could cause injury. If the pain is extreme, they may want to seek medical attention.

Conclusion

Practice of asana like Cat/Cow, Spinal Twist, Downward Dog, Plow Pose, Seated Forward Fold, Child's Pose, Eagle Pose, Locust Pose, Bow Pose and Triangle Pose are reduce Back Pain.

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Volume 39 . Issue 1
September 2020
ISSN : 2231 - 3265
International Journal of Health, Physical Education & Computer Science in Sports
A Peer Reviewed (Refereed) International Research Journal
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Research Article

Effect of Kriyas on VO_2 max of women

Kasturi Rajaput

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ABSTRACT

Yoga has considered internal purification of the human body in depth. The shuddhi kriyas (Cleansing Processes mentioned in the Niyamas of the 8 Limbs of Yoga) are intended to help to achieve total purification of the body. The organs where there can be a lot of impurities require these shuddhi kriyas. The internal organs, which come into contact with the external matters regularly, need to be purified. The trachea regularly comes into contact with the external air, the food pipe comes into contact with the external food products, and the mind comes into contact with the thoughts of the external world; these and such other organs need to be purified internally. This is especially useful in today's climate where there are many man-made chemicals that come into contact with our bodies and increase our toxic overload. Certain conditions can be cured with these kriyas, and the emphasis in Yoga is on the natural method of cleansing. Shat means 'six' and kriya means 'cleansing'. Yogic kriya remove the waste materials of our internal organs which are not expelled normally. Therefore, the aims of Hatha Yoga and of the Shatkriyas are to cleanse the internal organs and thereby create harmony between the major pranic flows, Ida and pingala, and attaining physical and mental purification and balance. The Purpose of the study was to find out "Effect of Kriyas on Vo_2 max of Women". To achieve these purpose 40 subjects in the age group ranging from 19 to 23 years studying in Government first Grade College for women Vijayapura, and Karnataka State were selected randomly as subjects. The following Kriyas training were selected for 6 weeks of training for 40 subjects. Criterion variable Physiological Variable was selected measured by using Vo_2 max. It was used for pre -test and post –test. The result shows that the 6 weeks of Kriyas training develops Vo_2 max Performance. Kriyas training develops Vo_2 max Performance.

Keywords: Kriyas training, Kapalabhati, Trataka, Neti, and Vo_2 max

INTRODUCTION

The Sanskrit root "kri" means "action" or "effort." Moreover, "ya" is the Atman or soul. Hence, its literal translation is some sort of action or effort involving your transcendental self. Yogic Kriyas are also known as Shuddhi-Kriya, Saucha, Sauca, Shudhi-Karan, Shat-kriyas, Shat-karma, and Shata-Karma. In other words, we can say that just as the external organs of the body are cleaned, in the same way, cleaning their internal organs is also very important. Ancient yogis found that Kriya Yoga is a means through which it helps to clean and remove unwanted substances stored in the internal organs of the body.

Kriyas have many benefits. Kriyas have physiological benefits and psychological benefits. Kriyas can be energizing, calming, or transcendent. One can more easily control the fluctuations of the mind through controlling one's energy, one's life force.

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In addition, through these kriya practices, this evolutionary action, we can burn through past karma in a way that frees us from the chain of karma. Kriya helps us shift our awareness so that we think thoughts instead of thoughts thinking us, arriving at a state in which we take the spontaneous right action. In other words, the state created through kriya is a dharmic or purposeful life, rather than a life ruled by past karma.

METHODOLOGY

The procedure adopted in the present research work is related to the selection of subjects, selection of variable, selection of test, and statistical technique involved in the study.

Selection of Subjects

The purpose of the study was to find out "EFFECT OF KRIYAS ON VO_2 MAX OF WOMEN." To achieve this purpose, 40 subjects in the age group ranging from 19 to 23 years studying in Government First Grade College for women Vijayapura, and Karnataka State were selected randomly as subjects. The following Kriyas training was selected for 6 weeks of training for 40 subjects. Criterion variable physiological variable was selected measured using Vo_2 Max. It was used for pre-test and post-test.

Selection of Variable

Independent Variable

Kriyas

- Jalaneeti
- Kapalbhati
- Trataka

Dependent Variable

Physiological Variable

- Vo_2 max

Selection of Test

The test item and measurement

S. No.	Test item and tool	Variable	Criterion measurement
1.	Cooper test 12 min Run and walk 400 m running track, marker, cones, and stopwatch.	Vo_2 max	Distance covered by subject against time taken.

Statistical Techniques

Standard devotion was used to find out a significant mean difference in pre-test and post-test scores of different groups with respect to each parameter. Standard devotion was used to find out significant mean, *t* value difference of two groups with respect to each parameter.

Table 1: The pre-test and post-test for Kriyas training experimental group on Vo_2 max performance

Variable	Test	*n*	Mean	SD	*t*-value
Vo_2 max	Pre-test	20	42.3667	8.53182	14.400*
	Post-test	20	65.4667	7.22416	

The level of significance 0.05 = Table value = 1.96

Figure 1: The pre-test and post-test for Kriyas training experimental group on Vo_2 max performance

The statistical analysis was carried out with the help of the Software Package of the Social Science 15.0 versions for SPSS packages.

Analysis and Interpretation of Data

The aim of the research work was to find out the "Effect of Kriyas on Vo_2 max of Women." For the purpose of the research study, 40 subjects in the age group of 19–23 years belonging to the student of Government First Grade College for women Vijayapura, and Karnataka State were selected as subjects for the present study. The subjects were divided into two groups. Group I treated as Kriyas training group, Group II considered as a control group.

Pre- and post-test data were gathered on Vo_2 max and the same as described in the following table.

Table 1 indicates that the "*t*" value is the more than table value that is 1.96; hence, it is significant.

The pre-test mean value is 42.3667 and the post-test mean value 65.4667. The post-test mean value is more than pre-test mean value. Is shows significant improvement in the Vo_2 performance of women owing to the 8 weeks Kriyas training the same as displayed in Figure 1a.

Figure 1a clearly indicates that the 8 weeks Kriyas training performance is drastically improved the Vo_2 max performance of the subjects.

SUMMARY

The purpose of the study was to investigate the "Effect of Kriyas on Vo_2 max of Women." The researcher selected Vo_2 max for physiological variables. Six weeks of Kriyas training were given to 40 subjects before training; the researcher conducted pre-test performance on physiological variable. The performance of the pre-test was recorded. After the 6 weeks of Kriyas Training, the post-test performance was recorded on Vo_2 max performance. The result of the post-test performance indicates significant improvement.

CONCLUSION

Six weeks of Kriyas training has shown significant improvement on Vo_2 max of subjects.

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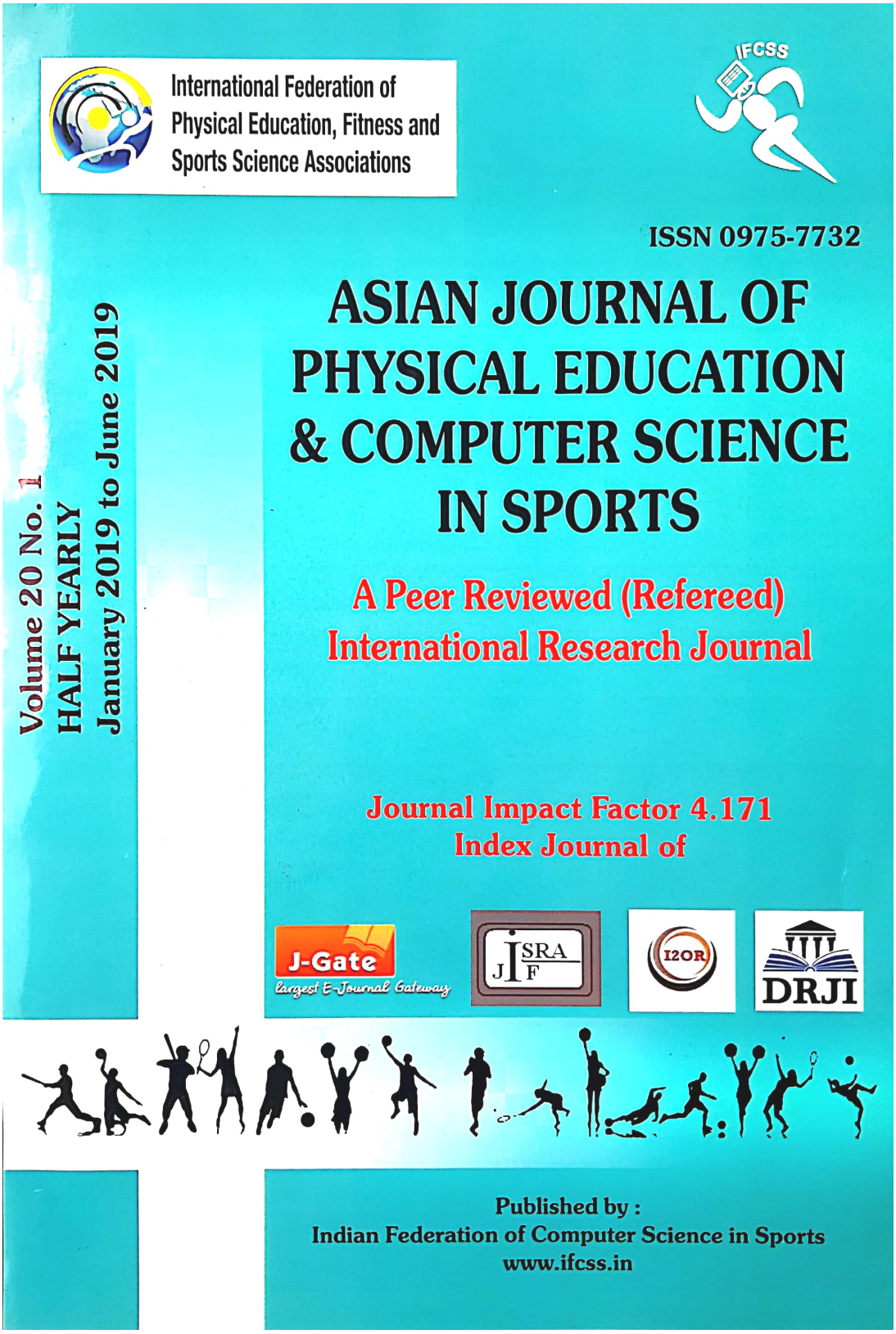
APPENDIX-II

RESEARCH PAPERS PUBLISHED IN THE NATIONAL AND INTERNATIONAL JOURNALS/BOOKS

- Bulletin of Indian Society and Culture an Inter-Disciplinary peer-Reviewed International Research Journal Vol 6 Issue 3, Page No.66-82, ISSN No 2395-3748 Published Paper on "**Asanas to Improve Memory".**
- Asian Journal of Physical Education & Computer Science in Sports A Peer Reviewed (Refereed) International Research Journal Vol.20 No.1, Page No.130-134, impact Factor-4.171, ISSN 0975-7732 Published Paper on **"Effect of Pranayama on Physiological Variable of Women"**
- Compliance Engineering Journal An UGC-CARE Approved Group – A Journal and Peer Reviewed International Research Refereed Journal Vol.10, ISSUE 11, November-2019, Page No: 484-490, ISSNo.0898-3577 Published Paper on **" Effect of Kriyas on Resting Pulse rate of women".**
- Compliance Engineering Journal an UGC-CARE Approved Group – A Journal and Peer Reviewed International Research Refereed Journal Vol.11, ISSUE 6, November-2020, Page No: 483-489, ISSNo.0898-3577 Published Paper on **"Effect of Asanas on Vo2 Max of Women".**
- Compliance Engineering Journal an UGC-CARE Approved Group – A Journal and Peer Reviewed International Research Refereed Journal Volume 11, Issue 12, December 2020, Page No:343-348, ISSN NO: 0898-3577 Published Paper on **"The Effect of Pranayama on Physical Changes among Post-Graduate Students"**


International Federation of
Physical Education, Fitness and
Sports Science Associations
IFCSS
ISSN 0975-7732
ASIAN JOURNAL OF
PHYSICAL EDUCATION
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A Peer Reviewed (Refereed)
International Research Journal
Volume 20 No. 1
HALF YEARLY
January 2019 to June 2019
Journal Impact Factor 4.171
Index Journal of
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Published by :
Indian Federation of Computer Science in Sports
www.ifcss.in

ISSN 0975--7732
Asian Journal of Physical Education and Computer Science in Sports
Volume No.20, No.1.pp: 130-134
Journal Impact Factor 4.171
A Peer Reviewed (Refereed) International Research Journal

Effect Of Pranayama On Physiological Variable Of Women

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Abstract

Pranayama is the perfect control of the life-currents through control of breath, and is the process by which we understand the secret of prana and manipulate it. The Purpose of the study was to find out **"Effect of Pranayama on Physiological Variable of Women".** To achieve this purpose 30 female in the age group ranging from 19 to 23 years studying in Government First Grade College for Women's Vijayapura Karnataka state were selected randomly as subjects. The following Pranayama training were selected for 12 weeks of training for 30 subjects. Criterion variable Physiological Variable was selected measured by using Resting Pulse rate. It was used for pre -test and post –test.The result shows that the 12 weeks of Pranayama training develops Resting Pulse rate Performance.Pranayama Training develops Resting Pulse rate Performance.
Keywords: Pranayama Training, Nadi Sodhana, Shitali Pranayama, Ujjayi Pranayama., Kapalabhati Pranayama and Resting Pulse rate

Introduction

Breathing is part of the autonomic nervous system, which is comprised of the sympathetic and parasympathetic nervous systems. In general, the sympathetic nervous system is responsible for governing our responses to stimuli, deciding whether they are threatening, and tripping the signals that tell the body how to react. This is sometimes described as fight or flight responses. The parasympathetic nervous system helps the body calm back down after the danger or stressor has passed.

One of the things that the sympathetic nervous system effects are the breath. In the presence of real danger, the breath becomes fast and short as your body tries to load itself with oxygen to facilitate its escape. This kind of breathing is also a response to non-life-threatening stressors. It happens in response to panic and then perpetuates the panic.

Methodology

The procedure adopted in the present research work is related to the selection of subjects, selection of variable, Selection of test and statistical technique involved in the study.

Selection of Subjects

The Purpose of the study was to find out **"Effect of Pranayama on Physiological Variable of Women".** To achieve this purpose 30 female in the age group ranging from 19 to 23 years studying in Government First Grade College for Women's Vijayapura Karnataka state were selected randomly as subjects. The following Pranayama training were selected for 12 weeks of training for 30 subjects. Criterion variable Physiological Variable was selected measured by using Resting Pulse rate. It was used for pre -test and post –test.

Selection of variable

Independent Variable

Pranayama Training

Nadi Sodhana.Shitali Pranayama.

Ujjayi Pranayama.Kapalabhati Pranayama.

Dependent Variable

Physiological Variable

Resting Pulse rate

Selection of Test

The test items were selected for this study after thorough review of literature as well as consultation with experts, Physical Education Professionals, and also Research supervisor. The selection tests and the criterion variables are presented in the Following table.

Sl. No	Test Items and tool	Variable	Criterion Measurement
1	Radial pulse rate	Resting Pulse rate	Pulse index and middle fingers together on the opposite wrist, about $^1/_2$ inches on the inside of the joint, in line with the index finger. Once pulse is located count the number of beats felt within a one minute period and recorded.

ANALYSIS OF INTERPRETATION OF DATA

The aim of the research work was find out the **"Effect of Pranayama on Physiological Variable of Women".** For the purpose of the research study 30 women's in the age group of 19 to 23 years belonging to the student of Government First Grade College for Women's of Vijayapura District of Karnataka state were selected as subjects for the present study. The subjects were divided into two groups. Group I treated as Pranayama Training group, Group II considered as control group.

Pre and post test data were gathered on Physical Variable and the same as described in the following table.

Table No. 4.1 Mean, Standard deviation and 't' value of Experimental Group and Control Group on Resting Pulse rate.

Variable	Test		Experimental Group	Control Group	't' value
Resting Pulse rate	Pretest	Mean	31.4000	31.4667	2.866
		SD	7.15638	6.31765	
	Post test	Mean	24.1000	32.4333	5.838
		SD	6.30462	6.15704	

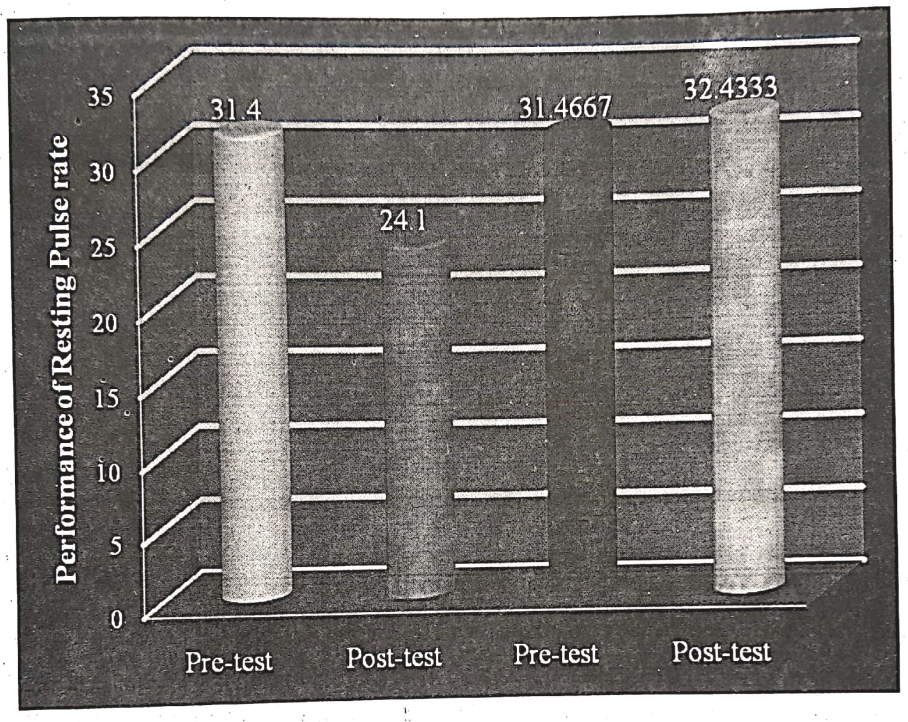
* The level of Significant is 0.05 = table value 4.01.

The pre-test mean values on Resting Pulse rate for the Experimental group and Control group is 31.4000 and 31.4667 respectively. The t value is. 2.866, this reveals that there is no Statistical difference between the Experimental group and Control group on Resting Pulse rate before the Commencement of Pranayama Training. It is inferred that the random Selection of the Subjects for the two groups are Successful.

The post-test Mean values on Resting Pulse rate for the Experimental group and Control group is 24.1000 and 32.4333 respectively. The t value is 5.838 the result of the Study indicates that the calculated values are higher than table value in post –test. The post test resting pulse rate Performance is lower than the pre-test Resting pulse rate Performance. These are significant difference between the Experimental group and the Control group on Resting pulse rate.

The Resting pulse rate Performance has been displayed in figure 4.1 (a).

Figure no 4.1 (a) Showing the Pre- test, Post- test, means of the Experimental and Control groups on Resting pulse rate



The above figure 4.1 (a) indicates that the post test values of Experimental group significantly improved the performance of Resting Pulse rate and also the post -test values of Resting Pulse rate were lower than the pre- test values due to 12 weeks of Pranayama Training. The Control group pre-test and post-test performance Resting Pulse rate shows no improvement.

Summary

The purpose of the study was to investigate the **"Effect of Pranayama on Physiological Variable of Women".** The researcher selected Resting Pulse rate, for Physiological Variable. Twelve weeks of Pranayama Training were given to 30 women's subjects before training the researcher conducted pre-test performance on Physiological Variable. The performance of the pre-test was recorded. After the 12 weeks of Pranayama Training the post –test performance was recorded on Physiological performance. The result of the post-test performance indicates significant improvement.

Conclusion

Twelve weeks of Pranayama Training has shown significant improvement on Resting Pulse rate of subjects.

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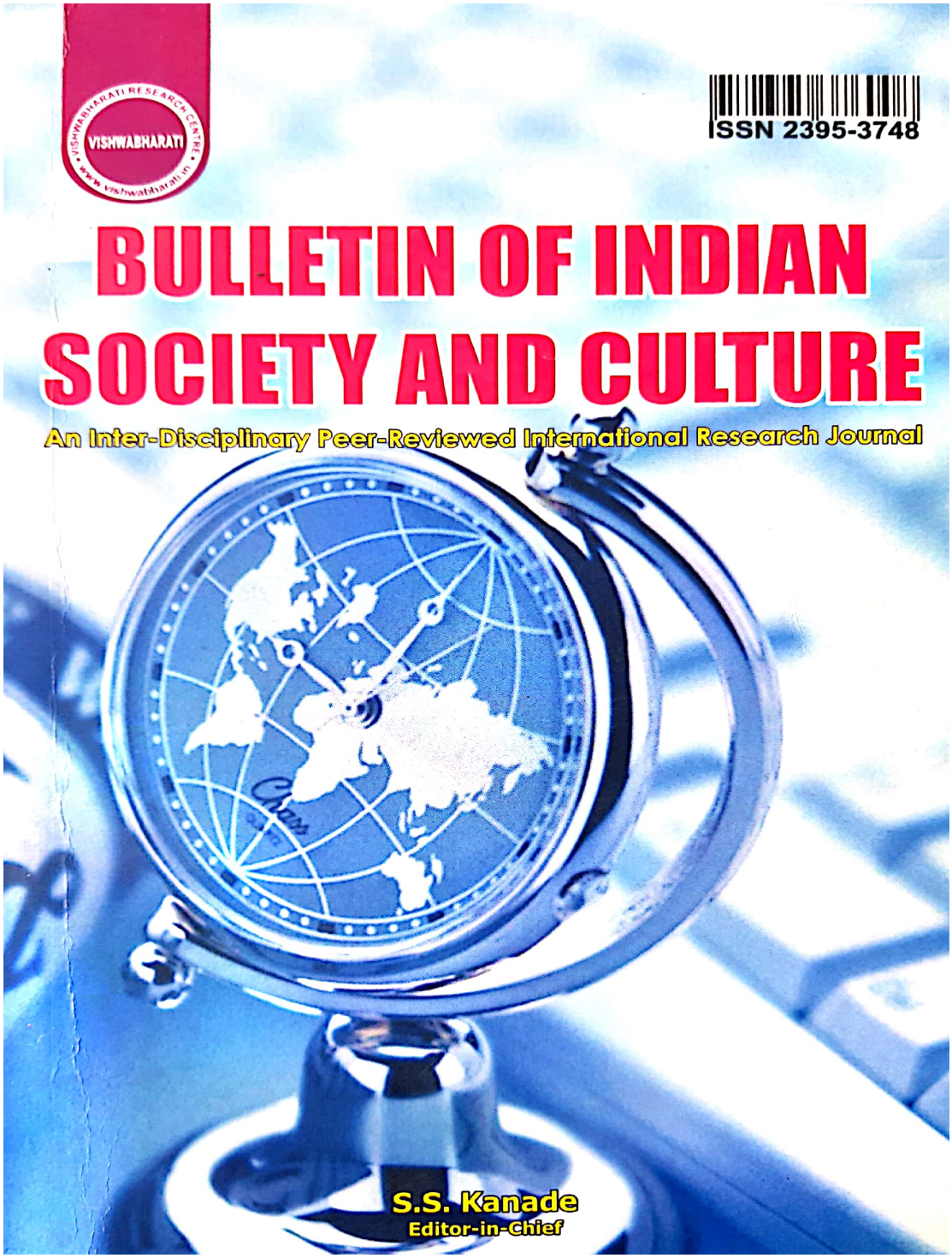
VISHWABHARATI
ISSN 2395-3748
BULLETIN OF INDIAN SOCIETY AND CULTURE
An Inter-Disciplinary Peer-Reviewed International Research Journal
S.S. Kanade
Editor-in-Chief

VISHWABHARATI
RESEARCH CENTRE

VISHWABHARATI

BULLETIN OF INDIAN SOCIETY AND CULTURE
ISSN 2395-3748
Vol 6. Issue 3. Mar 2019. pp. 66-82
http://www.vishwabharati.in
Paper received: 26 Feb 2019.
Paper accepted: 08 Mar 2019.
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Asanas to Improve Memory

Dr. Kasturi Rajaput & Dr. K.P. Martin

Abstract:

Yogasana is an ancient physical and spiritual discipline and branch of philosophy that originated in India reportedly more than 5,000 years ago. The word yoga comes from the Sanskrit word yuj, which means to yoke, join, or unite. The Iyengar School of yoga defines yuj as the "joining or integrating of all aspects of the individual - body with mind and mind with soul - to achieve a happy, balanced and useful life." The ultimate aim of yoga, they claim, is to reach kaivalya (emancipation or ultimate freedom).

In Patanjali's Yoga Sutras, asana is defined as a "steady, comfortable posture."

Memory is our ability to encode, store, retain and subsequently recall information and past experiences in the human brain. It can

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be thought of in general terms as the use of past experience to affect or influence current behaviour.

Key words: Asanas, Memory, Padmasana, Tadasana and **Vajrasana**

Introduction:

Yogasana is a scientific system of physical and mental practices that originated in India more than three thousand years ago. Its purpose is to help each one of us achieve our highest potential and to experience enduring health and happiness. With Yoga, we can extend our healthy, productive years far beyond the accepted norm and, at the same time; improve the quality of our lives.

Asana is traditionally defined as a "seat." Most commonly, it is the seated posture used for meditation. More typically now in yoga, the term is used for any physical posture of Hatha yoga. It is the third limb of Patanjali's eightfold path of ashtanga, following after the yamas and niyamas.

Asana practice is considered important by yogis because it helps to keep the physical body healthy. Given that the body is the vehicle for the spirit, looking after the physical body is important for spiritual development. Practicing asanas can also have a range of emotional and energetic benefits, increase discipline and concentration, and ready the mind for meditation.

Memory is the sums total of what we remember, and gives us the capability to learn and adapt from previous experiences as well as to build relationships. It is the ability to remember past experiences, and the power or process of recalling to mind previously learned facts, experiences, impressions, skills and habits. It is the store of things learned and retained from our activity or experience, as evidenced by modification of structure or behaviour, or by recall and recognition.

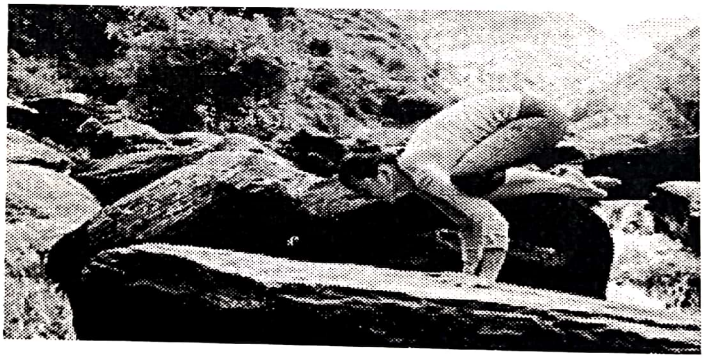
Asanas to Improve Memory:

1. Bakasana (Crane Pose)
2. Padmasana (Lotus Pose)
3. Padahastasana (Standing Forward Bend)

4. Sarvangasana (Shoulder Stand Pose)
5. Halasana (Plow Pose)
6. Paschimottanasana (Seated Forward Bend)
7. Tadasana (Tree Stand Pose)
8. Sukhasana
9. Vajrasana
10. Reclining Hero Pose

1. Bakasana (Crane Pose):

The word "Baka" is derived from the Sanskrit word which means Crane and the meaning of Asana is Posture. This Asana is very similar to the body posture of a crane, so it is also named as Crane pose. Bakasana is a compact arm leveling posture that helps in strengthening the arms similarly as the abdominal



Procedure:

- Stand in the position of Tadasana.
- After taking the position of Tadasana, come down to the Uttanasana position.
- While doing Uttanasana, keep the hands on the floor just in front of feet. For this, the Asanas need to bend a little more from hips.
- They are not capable to balance properly, attempt to keep a folded blanket below the hands so the body gets a platform to rest on.

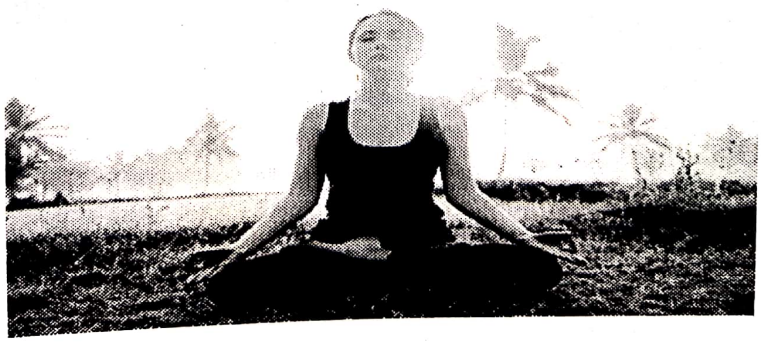
- Now Bend arms a bit (as much as possible).
- Attempt to carry left leg up in the air.
- Fold the knee and take a look at to rest the left knee on the outer facet of left arm.
- Fold the right leg from the knee and take a look at to put the right knee on the outer facet of the right arm.
- There ought to be an acceptable distance between each hands, so it becomes easier for to balance body on hands.
- Stay steady in this position for concerning 15-20 seconds, after that slowly-slowly release.

Benefits of Bakasana:

- Regular practice of this pose will increase mental and physical strength.
- Helps in to make the body more flexible.
- It increases endurance capacity.
- Practicing this posture on a daily routine helps in strengthening the forearms, wrists, and shoulders.

2. Padmasana (Lotus Pose):

The word Padmasana is a Sanskrit word which means "lotus flower" so it's also known as the "Lotus pose". It is so called because of the lotus-like formation which made by our legs during this asana.



Procedure:

- Sit on the floor and stretch legs, the legs should be straight in front. Hold the right leg in both the hands, fold the legs slowly and place it on left thigh. Ensure that feet should touch navel.
- Same like earlier fold the left knee, and hold it with both hands and place it on the right thigh close to the other. At this point both knees should touch the floor and the foot should face upwardly.
- Spinal cord should be straight at this point. feel some difficulty while sitting in the posture for a long time, can change the legs and then sit in the same position.
- Spinal cord should be erect, both hands should be together or put the palms facing upside on the knee joints and the thumb must touch index finger and the other fingers should face the upward.
- Breathing process should be slowly – slowly and deeply. (Inhale and Exhale) and focus on the breathing.

Benefits of Padmasana:

- Padmasana is the highly preferred asanas by yoga practitioner in the beginning stage for increasing the focus of mind and concentration. It helps in improving the concentration power and it will calm the brain also.
- This Asana helps to preserve vital fluids in the body and prevents abdominal diseases and female disorders connected with the reproductive organs.
- Doing this Asana gives your mind peace, solitude, and longevity to the practitioner. It increases the hungry and helps to relax the body.
- It can also help in the stretches the ankle and knees. This Asana is the base for all asanas and it strengthens the hip and knee joints of the female and can get painless peaceful mind.
- can reduce the unwanted fat of the hips and the thighs. This is the simplest and easiest asana which can practice by all the age

group of men and women they can get benefits of Yoga Asana.

3. Padahastasana (Standing Forward Bend):

'Padahastasana' widely known as 'Hand Under Foot Pose' is an intense forward bend and falls under the category of inverted yoga postures. It has great health effects on the body.

The Sanskrit name 'Padahastasana' is derived from 3 words.

Procedure:

- Starting Position: Tadasana (Mountain Pose), stand straight with erect spine, legs together, heels and big toes slightly touching each other. Hands to the side of the body. The weight of the body should neither be on the heels nor on the toes but distributed evenly on both of them. Relax and take deep breaths.
- Distance the legs hip-width apart.
- Inhale and slowly raise arms upwards. Stretch body upwards as well.
- Exhale and slowly bend the trunk forward from the hips till the hands reach the feet.
- Next, place the palms of hands under the soles.
- Elbows remain slightly bent pointing outwards.
- Loosen up the shoulders and let the arms relax. Take a few slow breaths.

- Knees must remain straight. The back ought to be concave not hunched.
- Bring the forehead between the knees if possible. Relax the back muscles of neck.
- Take long and deep breaths. Relax the body. Stay in this position for as long as feel comfortable.

Benefits of Padahastasana:

- Eliminates stress, anxiety and fatigue by energizing the body.
- Padahastasana improves balance, posture and flexibility.
- Improves blood circulation especially in the upper part of the body.
- Beneficial for those who suffer from problems relevant to throat and nasal.
- Tones and energizes spinal muscles and nerves.
- Increases concentration and speeds up metabolism.
- Beneficial for those who suffer from gastric problem, abdominal bloating and indigestion.

4. Sarvangasana (Shoulder Stand Pose):

In Sanskrit, Sarvangasana is the combination of two words (Sarva and anga) when these two words are combined together and form Sarvangasana. (Sarva + anga). In Sanskrit, Sarva means all and anga stands for limbs or body part. In this Pose every part of the body is involves so that's why it is known as Sarvangasana yoga pose.

Procedure:

- Lie down on the back straight.
- Breathe in and breathe out, lift the both legs in the upward direction.
- Stop at that point when both legs make a 90-degree angle with the floor.
- Make the Uttanpadasana Posture.
- While exhaling lift the waist; push legs back over the head.
- Use both hands for supporting waist.
- Get legs, back, and waist in one straight line.
- Stretch toes towards the sky, keep the eye on toes.
- Hold the position for some time, keep normal breathing.
- Slowly get back to initial position.
- Repeat this for three to four times.

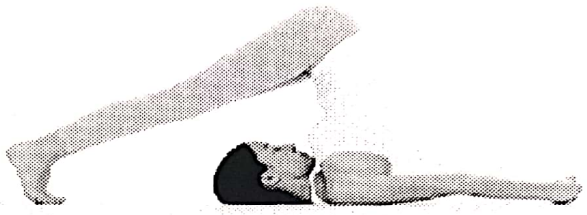
Benefits of Sarvangasana:

- Controls and cures the issues related to genital organs.
- Beneficial in constipation.
- Cures varicose veins and hemorrhoids.
- Useful in problems related to Ears, nose, and throat.
- Freshen the thyroid gland; coz during pose lots of blood flows towards the throat.
- Cures for sexual disorders.
- Beneficial in Asthma, diabetes, liver disorders and intestinal disorders.
- Controls shrinking of skins and wrinkles in the face.

5. Halasana (Plow Pose):

Halasana or Plow Pose is an asana. Sanskrit: Hala – Plow, Asana – Posture; Pronounced As – hah-LAHS-anna

The Halasana is named so because the basic shape of the pose resembles a typical plow used in Tibet and India.



Procedure:

- Lie flat on back, with arms placed beside the body and palms facing downwards.
- Inhale, and lift feet off the ground using abdominal muscles. Legs should be at a 90-degree angle.
- Use the hands to support hips and lift them off the floor.
- Bring feet in an 180-degree angle, such that toes are placed over and beyond head.
- Make sure the back is perpendicular to the ground.
- Hold the position for a minute while focusing on breathing. Exhale, and gently bring down legs. Avoid jerking the legs while releasing the pose.

Benefits of Halasana:

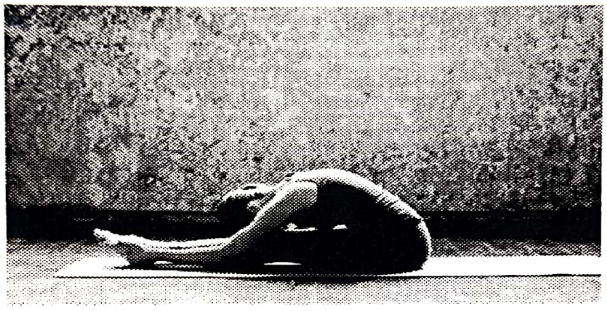
These are a few amazing Halasana benefits.

- This asana massages the digestive organs, and therefore, improves digestion and regulates appetite.
- It regulates metabolism and helps in weight loss.
- It is an excellent asana for diabetic patients because it normalizes the blood sugar levels.
- It helps reduce stress and fatigue.
- This asana also helps to calm the brain.
- It gives the spine and shoulders a good stretch.

- It works on the thyroid gland as well.

6. Paschimottanasana (Seated Forward Bend):

The word Paschim literally means west, Uttana means stretched out and asana is a pose. Here the word Paschim (west) doesn't mean the west side rather it indicated the back of the body. The back of the body is referred to as Paschim here. Hence a posture in which back of the body or spine is stretched out is called Paschimottanasana (forward bend pose).



Procedure:

- Sit up with the legs stretched out straight in front of on the floor.
- Keep the spine erect and toes flexed towards.
- Bring respiration to normal.
- Breathing in, slowly raise the both the arms straight above head and stretch up.
- Slowly breathe out and bend forward from the hip joint, chin moving toward the toes keeping the spine erect.
- Place the hands on legs, wherever they reach, without putting much effort.
- Possible hold of toes and pull on them to help go forward.
- Stay in this position as long as possible.
- After the exertion limit reached inhale and raise up stretching up the arms straight above the head.

- Breathe out and bring the arms down placing the palms on the ground.
- Relax for a while and try to feel the changes occurred in the body.

Benefits of Paschimottanasana:

- Stretches the whole spine, shoulders specifically lower back, hamstring, and hips.
- Massages and tones the abdominal and pelvic organs.
- Improves the circulation.
- Activates the spinal nerves.
- Tones the arms.
- Reduces abdomen fat.
- Beneficial for the liver, kidneys, ovaries, and uterus.
- It relieves in a headache, lower down the level of and relaxes body.
- Daily Practice of Paschimottanasana improves your digestive system.

7. Tadasana (Tree Stand Pose):

The word "Tada" comes from the Sanskrit word, which meaning is "Palm tree" or another meaning is "mountain", and meaning of asana is "posture" or "seat". So this asana is called Tadasana.

Procedure:

- Stand erect with legs slightly apart with the hands on the sides.
- Raise the hand above the head and look straight.
- Interlock the fingers and turn it upwards. The palms should be facing the sky.
- The gaze can be adjusted to look slightly above the horizontal level.
- Take a deep breath and stretch the arms, shoulders and chest upwards.
- Raise the heels so that the weight of the body is borne by the toes.
- Stretch the whole body from the feet to the head.
- Remain in this position for few seconds.
- Bring down the heels while breathing out.
- This is one round. One can practice up to 10 rounds.
- During the whole practice the eyes should remain steadily fixed in front little above the head level.

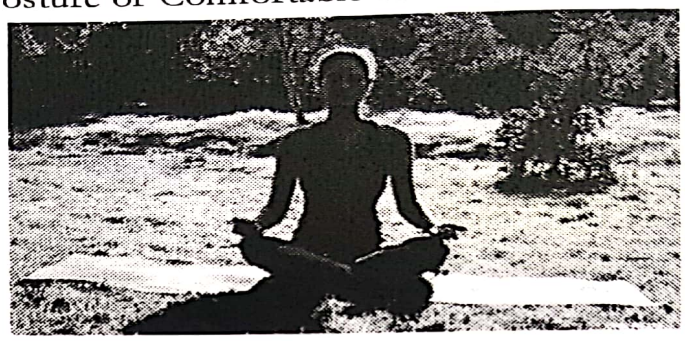
Benefits of Tadasana:

- Tadasana gives a good stretch to the arms, chest, abdomen, spine and the legs.
- It creates a sense of physical and mental balance. This sense of balance can be enhanced if one practices the same with closed eyes.
- Tadasana can help to increase height.
- Women during early stages of pregnancy can be benefited due to the gentle stretch of the abdomen.

8. Sukhasana (Easy Pose):

Sukhasana is the simplest meditative posture and hence known as Easy Pose. It is an excellent pose for beginners and for those who have a very stiff body. The Sanskrit name Sukhasana is derived

from two words: Sukh = Feeling of joy, pleasure or happiness
Asana = Posture or Comfortable seat.



Procedure:

- Sit straight with the legs stretched out in front of the body.
- Bend the left leg and place the left foot beneath right thigh.
- Similarly, bend the right leg and place the right foot beneath left thigh.
- Rest the outer edge of feet on the floor.
- Adjust the body and legs to get comfortable in the pose.
- The head, neck and spine must be erect (without strain).
- Place the palms on the knees or thighs.
- Keep the shoulder relaxed and elbows a bit bent.
- Close the eyes and relax the whole body, take slow and deep breaths.
- Feel each and every breath moving in and out of the body.
- Practice for a minute or less the feel discomfort.
- Practice twice by interchanging the position of the legs.

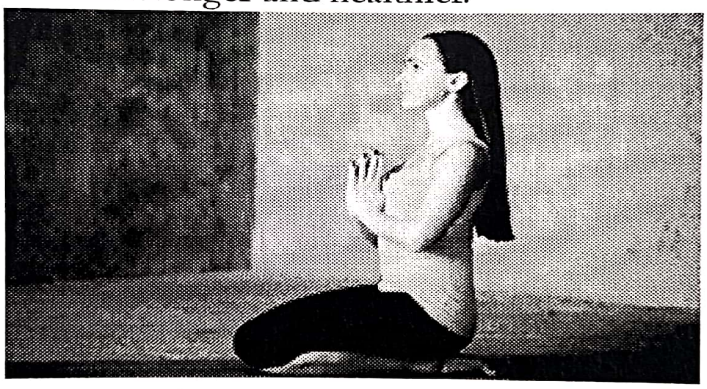
Benefits of Sukhasana:

- Gradually strengthens muscles of the back and improves body posture.
- Being a meditative pose it has relaxing effects on mind and body.

- Works as a preparatory pose for more difficult meditative poses.
- Builds physical and mental balance.
- Helpful in reducing stress and anxiety.
- Excellent for people having a stiff body.
- Creates flexibility in ankle, knee and hip joints.

9. Vajrasana (Diamond Pose):

Vajrasana is the simple asana which can be practiced after lunch or dinner also. Vajrasana is also known as 'diamond pose' which is best for practicing breathing exercises and meditation. Regular practice makes stronger and healthier.



Procedure:

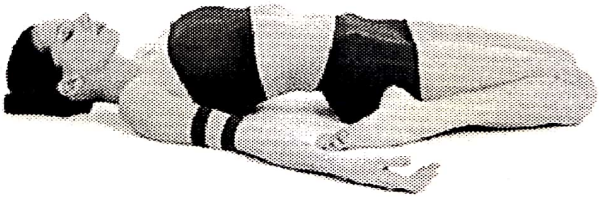
- Sit on the flat floor and fold the legs as shown in the above image.
- Keep the spine straight and close the eyes.
- Keep the right palm on right knee and left palm on left knee.
- Now start to inhale slowly then exhale.
- When exhale try to think that disorders are coming out from nose.
- Repeat these steps for 5 minutes and take a rest.Can increase the time for 15 minutes.

Benefits of Vajrasana:

- Calms the mind and bring stability to mind.
- Cures constipation, acidity, increases digestion process.
- Those suffering from gas problems can practice immediately after lunch or dinner.
- Helps to get rid of back pain.
- Cures stomach disorder.
- Cures urinary problems.
- Strengthens the sexual organs.
- Increases blood circulation.
- It is preferred for meditation and concentration.
- Helps to reduce obesity.

9. Supta Virasana (Reclining Hero Pose):

Meaning of "Supta" is reclined and it is a Sanskrit word and the word "Vira" is derived from the word of Sanskrit. In Sanskrit the meaning of "Vira" is hero or a warrior; and Asana stands for Pose, posture or sit. Supta Virasana is a reclined form of Virasana in which the upper body reclines backwards in a way that back rests on the floor or ground. Arms rest on the floor to the side of trunk, with palms facing upward.



Procedure:

- First get into the pose of Virasana (Hero Pose).
- Keep the hands beside the sides.
- Breathe out and lean backwards towards the ground.
- Put the weight on to the hands and after that elbows and lower arms.

- When are inclining toward the elbows, place hands at the back (on the pelvis)
- Then discharge the buttocks and lower back by forcing/ pushing yourself downwards towards the tailbone.
- May finish reclining by going towards the floor or by reclining with support.
- Can use two blankets of same height for the support. These blankets help while are leaning downwards.
- Remain in the position for about 30 to 60 seconds or up to 60 seconds.
- Once are master in it, can hold it for 5 minutes..

Benefits of Supta Virasana:

- Strengthens the aches and stretches quadriceps.
- Supta Virasana is beneficial in the treatment of sciatica.
- Reclined Hero pose helps in sleeping disorders like insomnia.
- Improves digestion.
- It helps to relieve menstrual pain symptoms.
- Stretches the abdomen, deep hip flexors, ankles and thighs.
- Asthma and other diseases like arthritis can also be treated by this pose.
- It is beneficial in headaches, colds, flat feet, infertility, and menstrual problems e.t.c.

Conclusion:

Asanas to Improve Memory like Asanas Bakasana, Padmasana, Pasahastasana, Sarvangasana, Halasana, Paschimottanasana, Tadasana, Sukhasana and Vajrasana.

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COMPLIANCE ENGINEERING JOURNAL

An UGC-CARE Approved Group - A Journal

An ISO : 7021 - 2008 Certified Journal

ISSN NO: 0898-3577 / web : www.ijceng.com / e-mail : submitcejournal@gmail.com

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Paper ID:

This is to certify that the paper entitled

EFFECT OF KRIYAS ON RESTING PULSE RATE OF WOMEN

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Karnataka State Akkamahadevi Women's University, Vijayapura.

Has been published in

COMPLIANCE ENGINEERING JOURNAL, VOLUME 10, ISSUE 11, NOVEMBER - 2019

Yasu Wang, Editor-In-Chief
PRJ JOURNAL

International Organization for Standardization
7021-2008

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ICSSR Post - Doctoral Fellow Research Guide

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Abstract

Kriya Yoga is a path for spiritual awakening—a way to discover our essential nature and live a more conscious and fulfilling life. "Kriya" means "action" and "yoga" means conscious union of body, mind, soul, and Spirit. Yoga, in the highest sense, is realizing we are one with the Infinite—integrally connected with all that is. "Kriya Yoga" simply indicates those actions we take that contribute to the realization of this innate wholeness.

Methodology

The Purpose of the study was to find out "**Effect of Kriyas on Resting Pulse Rate of Women".** To achieve this purpose 30 female in the age group ranging from 19 to 23 years studying in SECAB A.R.S. Inamdar Arts, Science & Commerce College for Women, Vijayapura Karnataka state were selected randomly as subjects. The following Kriyas training were selected for 10 weeks of training for 30 subjects. Criterion variable Physiological Variable was selected measured by using Resting Pulse rate. It was used for pre -test and post –test.

Result: The result shows that the 10 weeks of Kriyas Training develops Resting Pulse rate Performance.

Conclusion: Kriyas Training develops Resting Pulse rate Performance.

Keywords: Kriyas Training, Kapalabhati, Neti Trataka and Resting Pulse rate.

Introduction

In the science of yoga there are various systems: karma yoga, bhakti yoga, raja yoga, gyana yoga. Apart from these four yogas, there is laya yoga, mantra yoga, and a very important form of yoga called kriya yoga. If you make a careful study of these yogas, you will find that each and every path is intended to effect a reorientation or perfection in some part of your being.

Karma yoga helps you to unburden the load of karma which you carry all the time in your mind, so that, with a lighter mind, you can have inner experiences. Bhakti yoga helps you to adjust the surplus emotions on account of which you do not enjoy life, but suffer throughout. When the emotions are properly adjusted, there is automatic concentration of mind and dissipations come to an end. Raja yoga teaches you how to control the mind, how to control the mental force, and bring it to one central point.

Like this, there are various forms of yoga which train the different aspects of your existence. These yoga paths should be practiced side by side, because you are a human being, a blending or a combination of body, emotion, psyche and intellect- head, heart and hand, let us say. If you follow a lopsided path, practicing only gyana yoga or hatha yoga or bhakti yoga, and no other yoga, professing that this yoga is supreme, then you are making a great mistake insofar as evolution is concerned. You may become an authority on that particular system of yoga, but as far as the development or progress of your inner self is concerned, it will be lopsided. In order to avoid unbalanced development, it is very necessary to make a synthesis, a happy blending, of yoga practices. Man is dynamic by nature (rajasic), He is also emotional, psychic and rational. Some people are predominantly rational; others are predominantly psychic, emotional or dynamic. According to the prominence of your qualities, one type of yoga should be selected as the main yoga. This means that you may be a raja yogi, a bhakti yogi, or a karma yogi, but that side by side with this yoga you are practicing other forms of yoga also.

However, when all the yoga paths are practiced and you come to a point where you find that, although concentration has been achieved, inner peace has been experienced, and you are able to maintain total quietness of body, mind and spirit for a prolonged period, but still something is lacking, then there is definitely an important path for you called kriya yoga.

Methodology

The procedure adopted in the present research work is related to the selection of subjects, selection of variable, Selection of test and statistical technique involved in the study.

Selection of Subjects

The Purpose of the study was to find out **"Effect of Kriyas on Resting Pulse Rate of Women".** To achieve this purpose 30 female in the age group ranging from 19 to 23 years studying in SECAB A.R.S. Inamdar Arts, Science & Commerce College for Women, Vijayapura Karnataka state were selected randomly as subjects. The following Pranayama training were selected for 10 weeks of training for 30 subjects. Criterion variable Physiological Variable was selected measured by using Resting Pulse rate. It was used for pre -test and post – test.

Selection of variable

Independent Variable

Kriyas Training

- Kapalabhati
- Neti
- Trataka

Dependent Variable

Physiological Variable

- Resting Pulse rate

Selection of Test

The test items were selected for this study after thorough review of literature as well as consultation with experts, Physical Education Professionals, and also Research supervisor. The selection test and the criterion variable are presented in the Following table.

Sl. No	Test Items and tool	Variable	Criterion Measurement
1	Radial pulse rate	Resting Pulse rate	Pulse index and middle fingers together on the opposite wrist, about $^1/_2$ inches on the inside of the joint, in line with the index finger. Once pulse is located count the number of beats felt within a one minute period and recorded.

Statistical techniques

Standard devotion was used to find out significant mean difference in pre test and post test scores of different groups with respect to each parameter. Standard devotion was used to find out significant mean, t value difference of two groups with respect to each parameter.

The statistical analysis was carried out with help of the softer ware package of social science 15.0 versions for SPSS Packages.

ANALYSIS AND INTERPRETATION OF DATA

The aim of the research work was find out the **"EFFECT OF KRIYAS ON RESTING PULSE RATE OF WOMEN".** For the purpose of the research study 30 women's in the age group of 19 to 23 years belonging to the student of SECAB A.R.S. Inamdar Arts, Science & Commerce College for Women, Vijayapura Karnataka state were selected as subjects for the present study. The subjects were divided into two groups. Group I treated as Kriyas Training group, Group II considered as control group.

Pre and post test data were gathered on Physical Variable and the same as described in the following table.

Table No.4.1 Showing the Pre-test and Post–test for Kriyas training Experimental Group on Resting pulse rate performance.

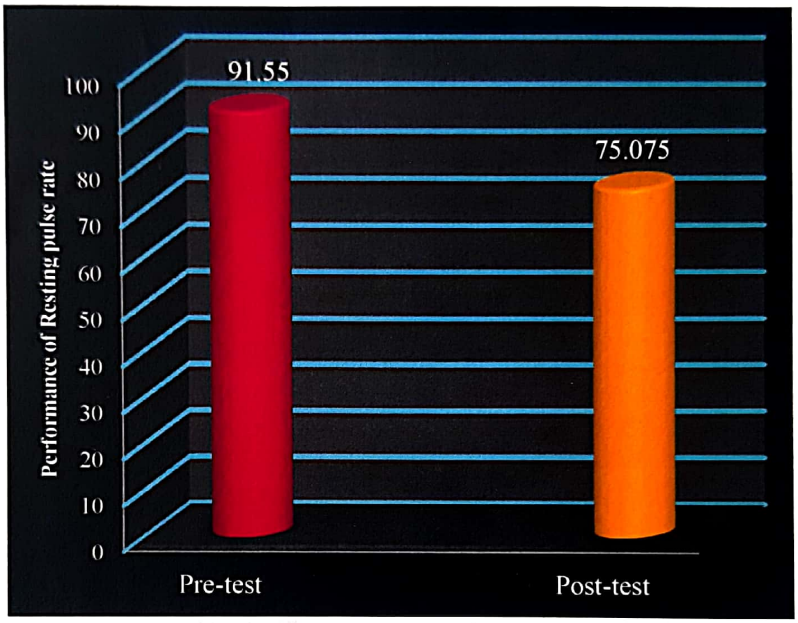
Variable	Test	N	Mean	SD	t- Value
Resting pulse rate	Pre-test	40	91.5500	5.14881	7.772
	Post-test	40	75.0750	11.62753	

The level of significant 0.05 =Table value =2.704

Table No 4.1 indicates that the t value is more than the table value that is 2.704, hence it is significant.

The pre-test mean value is 91.5500 and the post-test mean value 75.0750. The post-test mean value is less than pre-test mean value. It shows significant improvement in the Resting pulse rate performance of Women owing to the ten weeks Kriyas training the same as displayed in the figure 4.1 (a).

Figure No.4.1 (a) showing the Pre-test and Post–test for Kriyas training Experimental Group on resting pulse rate performance.



The above figure 4.1 (a) clearly indicates that the ten weeks Kriyas training performance is drastically improved the resting pulse rate of the subjects.

Summary

The purpose of the study was to investigate the **"Effect of Kriyas on Resting Pulse Rate of Women".** The researcher selected Resting Pulse rate, for Physiological Variable.

Ten weeks of Kriyas Training were given to 30 women's subjects before training the researcher conducted pre-test performance on Physiological Variable. The performance of the pre-test was recorded. After the 10 weeks of Kriyas Training the post –test performance was recorded on Physiological performance. The result of the post-test performance indicates significant improvement.

Conclusion

Ten weeks of Kriyas Training has shown significant improvement on Resting Pulse rate of subjects.

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COMPLIANCE ENGINEERING JOURNAL

An UGC-CARE Approved Group - II Journal

An ISO : 7021 - 2008 Certified Journal

ISSN NO: 0898-3577 / web: www.ijceng.com / e-mail: submitcejournal@gmail.com

Certificate of Publication

Paper ID: CEJ/3023

This is to certify that the paper entitled

Effect of Asanas on Vo 2 max of Women

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Has been published in

COMPLIANCE ENGINEERING JOURNAL, VOLUME 11, ISSUE 6, JUNE - 2020.

Yasu Wang, Editor-In-Chief
CE JOURNAL

6.2 IMPACT FACTOR

ISO International Organization for Standardization 7021-2008

Effect of Asanas on Vo_2 max of Women

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Abstract

An asana is a body posture, originally and still a general term for a sitting meditation pose, and later extended in hatha yoga and modern yoga as exercise, to any type of pose or position, adding reclining, standing, inverted, twisting, and balancing poses. The Yoga Sutras of Patanjali define "asana" as "[a position that] is steady and comfortable". Patanjali mentions the ability to sit for extended periods as one of the eight limbs of his system. Asanas are also called yoga poses.

Methodology

The Purpose of the study was to find out "**Effect of Asanas on Vo_2 max of Women".** To achieve these purpose 50 subjects in the age group ranging from 19 to 23 years studying in SECAB A.R.S. Inamdar Arts, Science & Commerce College for Women, Vijayapura, and Karnataka State were selected randomly as subjects. The following Asanas training were selected for 8 weeks of training for 50 subjects. Criterion variable Physiological Variable was selected measured by using Vo_2 max. It was used for pre -test and post –test.

Result: The result shows that the 8 weeks of Asanas training develops Vo_2 max Performance.

Conclusion: Asanas training develops Vo_2 max Performance.

Keywords: Asanas training, Padmasana, Vajrasana, Dhanurasana, Bhujangasana and Vo2 max.

Introduction

Asana 'sitting down', 'to sit down' is a body position, typically associated with the practice of Yoga, originally identified as a mastery of sitting still. In the context of Yoga practice, asana refers to two things: the place where a practitioner (or Yogin, in general usage), yogi (male), or Yogini (female) sits and the manner (posture) in which he/she sits. In the Yoga sutras, Patanjali suggests that asana is "to be seated in a position that is firm, but relaxed" for extended, or timeless periods.

As a repertoire of postures were promoted to exercise the body-mind over the centuries to the present day, when yoga is sought as a primarily physical exercise form, modern usage has come to include variations from lying on the back and standing on the head, to a variety of other positions. However, in the Yoga sutras, Patanjali mentions the execution of sitting with a stead fast mind for extended periods as the third of the eight limbs of Classical or Raja yoga, but does not refer standing postures or Kriyas. Yoga practitioners (even those who are adepts at various complex postures) who seek the "simple" practice of chair-less sitting generally find it impossible or surprisingly gruelling to sit still for the traditional minimum of one hour (as still practiced in eastern Vipassana), some of them then dedicating their practice to sitting asana and the sensations and mind-states that arise and evaporate in extended sits.

Asana later became a term for various postures useful for restoring and maintaining a practitioner's well-being and improving the body's flexibility and vitality, with the goal of cultivating the ability to remain in seated meditation for extended periods. Asanas are widely known as "Yoga postures" or "Yoga positions". "Asana" quite simply means "a posture". Any way that we may sit, stand or position our hands is an asana. Therefore, many Asanas are possible. However, a particular posture that leads you to a higher possibility is called a Yogasana. Yoga in the West is commonly practiced as physical exercise or alternative medicine, rather than as the spiritual self-mastery meditation skill.

Methodology

The procedure adopted in the present research work is related to the selection of subjects, selection of variable, Selection of test and statistical technique involved in the study.

Selection of Subjects

The Purpose of the study was to find out **"Effect of Asanas on Vo_2 max of Women".** To achieve this purpose 50 Subjects in the age group ranging from 19 to 23 years studying in SECAB A.R.S. Inamdar Arts, Science & Commerce College for Women, Vijayapura, and Karnataka state were selected randomly as subjects. The following Asanas training were selected for 8 weeks of training for 50 subjects. Criterion variable Physiological Variable was selected measured by using Vo2. It was used for pre -test and post –test.

Selection of Variable

Independent Variable

Asanas

- Padmasana
- Vajrasana
- Vakrasana
- Tadasana
- Vrikshasana
- Savasana
- Naukasana
- Halasana
- Makarasana
- Bhujangasana
- Dhanurasana

Dependent Variable

Physiological Variable

- **Vo_2 max**

Selection of test

The test item and Measurement

SL NO	Test item and tool	Variable	Criterion Measurement
1.	Cooper test12 minutes Run and walk 400 meter running track, marker, cones and stop watch.	Vo_2 max	Distance covered by subject against time taken.

Statistical techniques

Standard devotion was used to find out significant mean difference in pre test and post test scores of different groups with respect to each parameter. Standard devotion was used to find out significant mean, t value difference of two groups with respect to each parameter.

The statistical analysis was carried out with help of the softer ware package of social science 15.0 versions for SPSS Packages.

Analysis and Interpretation of Data

The aim of the research work was find out the **"Effect of Asanas on Vo_2 max of Women".** For the purpose of the research study 50 Subjects in the age group of 19 to 23 years belonging to the student of SECAB A.R.S. Inamdar Arts, Science & Commerce College for Women, Vijayapura, and Karnataka state were selected as subjects for the present study. The subjects were divided into two groups. Group I treated as Asanas training group, Group II considered as control group.

Pre and post test data were gathered on Vo2 max and the same as described in the following table.

Table No.4.1 Showing the Pre-test and Post-test for Asanas training Experimental Group on Vo2 max performance.

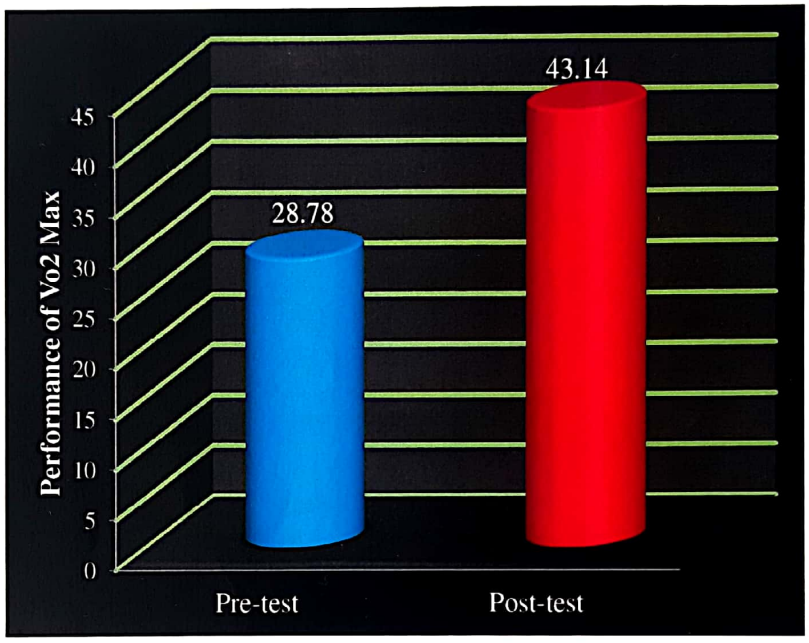
Variable	Test	N	Mean	SD	t- Value
Vo2 max	Pre-test	50	28.7800	13.56058	7.18828
	Post-test	50	43.1400	22.21326	

The level of significance 0.05=Table value=2.013

Table no.4.1 indicate that the't' value is the more than table value that is2.013, hence it is significant.

The pre-test mean value is 28.7800 and the post-test mean value 43.1400. The post-test mean value is more than pre-test mean value. Is shows significant improvement in the Vo_2 performance of Women owing to the eight weeks Asanas training the same as displayed in the figure 4.1 (a)

Figure No.4.1 Showing the Pre-test and Post test for Asanas training Experimental Group on Vo2 max Performance



The above figure 4.1 (a) clearly indicate that the eight weeks Asanas training performance is drastically improved the Vo_2 max performance of the subjects.

Summary

The purpose of the study was to investigate the **"Effect of Asanas on Vo2 max of Women".** The researcher selected Vo_2 max for physiological Variable. Eight weeks of Asanas training were given to 50 subjects before training the researcher conducted pre-test performance on Physiological Variable. The performance of the pre-test was recorded. After the 8 weeks of Asanas Training the post-test performance was recorded on Vo_2 max performance. The result of the post-test performance indicates significant improvement.

Conclusion

Eight weeks of Asanas training has shown significant improvement on Vo_2 max of subjects.

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COMPLIANCE ENGINEERING JOURNAL

An UGC-CARE Approved Group - II Journal

An ISO : 7021 - 2008 Certified Journal

ISSN NO: 0898-3577 / web: www.ijceng.com / e-mail: submitcejournal@gmail.com

Certificate of Publication

Paper ID: CEJ/3543

This is to certify that the paper entitled

The Effect of Pranayama on Physical Changes among Post-Graduate Students

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Has been published in

COMPLIANCE ENGINEERING JOURNAL, VOLUME 11, ISSUE 12, DECEMBER - 2020.

Yasu Wang, Editor-In-Chief
CE JOURNAL

6.2 IMPACT FACTOR

ISO International Organization for Standardization 7021-2008

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The Effect of Pranayama on Physical Changes among Post-Graduate Students

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Abstract: Background: Pranayama has three components: the external breath, the internal breath and the steady state in between the two. When the breath is expired, it is rechaka, the first kind of pranayama. When the breath is drawn in, it is the second, termed pooraka. When the breath is suspended, it is the third kind, called kumbhaka, or retention of breath. In the practice of pranayama, rechaka, pooraka and kumbhaka, are controlled and regulated by space, time and number. Objectives of the study 1) To characterize the Effect of Pranayama on Physical Changes among post-Graduate students. 2) The second objective of the study was to The Effect of Pranayama on Physical Changes among post-Graduate students. Materials and Methods randomly selected Government First Grade Degree college for women 40 female students and Age group of the subject 18 to 22 years. Conclusions Significant difference was found between pre-test and post-test of college women students in relation to Physical changes. Significant difference was found between pre-test and post-test of Women College students in relation to Flexibility (Sit and Reach).

Keywords: - Physical, Flexibility and Post-Graduate Students

Introduction

Pranayama, the yogic art of breathing, comes from the root words prana and ayama. Prana means "life force" and ayama means "expansion, manifestation, or prolongation." The practice of pranayama therefore is the practice of expanding our own prana so that it harmonizes with the universal prana. This results in oneness; the merging of a person's own consciousness with universal consciousness. It is in this union that we realize we are not simply a limited physical body, but are, in fact, an immortal spirit.

Pranayama is breath control on the physical level and prana (life force) control on the subtle level. This is achieved through conscious inhalation (puraka), exhalation (recaka), and retention (kumbhaka) of breath along with focused attention on some particular part or area of the physical or subtle body, such as the heart or sixth chakra (the so-called "third eye") at the middle of the forehead.

The conscious guidance of Prana in the body gives rise to an increase in vitality, physical detoxification and improved immunity, as well as the attainment of inner peace, relaxation and mental clarity. Pranayama is powerful breathing technique that ensures healthy body and calm mind. Regular practice of various types of pranayama improves breathing pattern, purifies blood, boosts resistance power and gives physical strength. It is the perfect control of the life-currents through control of breath, and is the process by which we understand the secret of prana and manipulate it.

Methodology

The procedure adopted in the present research work is related to the selection of subjects, selection of variable, Selection of test and statistical technique involved in the study.

Selection of Subjects

The Purpose of the study was to find out "The Effect of Pranayama on Physical Changes among Post-Graduate students". To achieve this purpose 40 Subjects in the age group ranging from 18 to 22 years studying in Government First Grade Degree College for women, Vijayapura, and Karnataka State were selected randomly as subjects. The following Pranayama

Training were selected for 6 weeks of training for 40 subjects. Criterion variable Physical Variable was selected measured by using Flexibility. It was used for pre -test and post –test.

Selection of Variable

Independent Variable

Pranayama Training

- Anuloma Viloma Pranayama
- Nadi Shodhanana
- Sheetali Pranayama
- Sheetkari pranayam
- Bhramari pranayama

Dependent Variable

Physical Variable

- Flexibility

Selection of test

The test item and Measurement

SL NO	Test item and tool	Variable	Criterion Measurement
1.	Sit and Reach test	Flexibility	Ruler or measurement tape.

Statistical techniques

Standard devotion was used to find out significant mean difference in pre test and post test scores of different groups with respect to each parameter. Standard devotion was used to find out significant mean't' value difference of two groups with respect to each parameter.

The statistical analysis was carried out with help of the softer ware package of social science 15.0 versions for SPSS Packages.

Analysis and Interpretation of Data

The aim of the research work was find out the **"The Effect of Pranayama on Physical Changes among Post-Graduate students".** For the purpose of the research study 40 Subjects in the age group of 18 to 22 years belonging to the student of Government First Grade Degree College for women, Vijayapura, and Karnataka State were selected as subjects for the present study. The subjects were divided into two groups. Group I treated as Pranayama Training group, Group II considered as control group.

Pre and post test data were gathered on Flexibility and the same as described in the following table.

Table No.4.1(a) Showing the Mean, Standard Deviation and't'- value of Pre-test and Post–test for Pranayama training Experimental Group on Flexibility Performance.

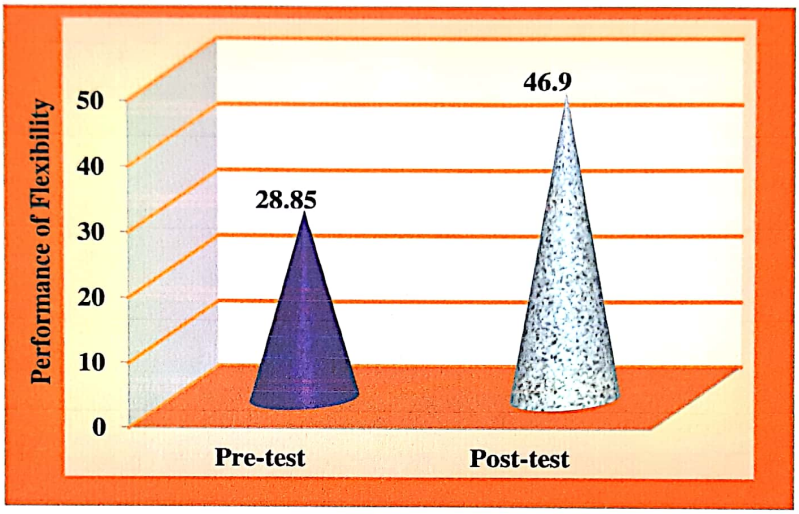
Variable	Test	N	Mean	SD	t- Value
Flexibility	Pre-test	20	28.8500	6.82314	
	Post-test	20	46.900	15.10281	4.980*

The level of significant 0.05=Table value= 1.725

Table No 4.1(a) indicates that the't' value is more than the table value that is 1.725, hence it is significant.

The pre-test mean value is 28.8500 and the post-test mean value 46.900. The post-test mean value is more than pre-test mean value. It shows significant improvement in the Flexibility performance of Subjects owing to the six weeks Pranayama training the same as displayed in the figure 4.1(a)

Figure No.4.1 (b) Showing the Mean, Standard Deviation and't'- value of Pre-test and Post–test for Pranayama training Experimental Group on Flexibility Performance.



The above figure 4.1 (b) clearly indicates that the six weeks Pranayama training performance is drastically improved the Flexibility of the subjects.

Summary

The purpose of the study was to investigate the **"The Effect of Pranayama on Physical Changes among post-Graduate students".** The researcher selected Flexibility for physical Variable. Four six of Pranayama training were given to 40 subjects before training the researcher conducted pre-test performance on Physical Variable. The performance of the pre-test was recorded. After the 6 weeks of Pranayama Training the post-test performance was recorded on Flexibility performance. The result of the post-test performance indicates significant improvement.

Conclusion

Six weeks of Pranayama training has shown significant improvement on Flexibility of subjects.

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